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United States Department of the Interior
Geological Survey

Small Area Peak-Flow Highway Program in Montana



October 1961 to September 1962

Prepared in cooperation with the

Montana Highway Commission

and

U.S. Department of Commerce

Bureau of Public Roads

Helena, Montana

March 1963

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SMALL-AREA PEAK-FLOW HIGHWAY PROGRAM IN MONTANA

Progress Report
for the
Water Year Ending September 30, 1962

Prepared in cooperation
with the
Montana Highway Commission
and the
U. S. Department of Commerce, Bureau of Public Roads

By
Fred C. Boner

U. S. GEOLOGICAL SURVEY
408 FEDERAL BUILDING
HELENA, MONTANA
MARCH 1963



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SMALL-AREA PEAK-FLOW HIGHWAY PROGRAM IN MONTANA

Progress Report for the Water Year
Ending September 30, 1962

INTRODUCTION

A cooperative program to investigate the magnitude and frequency of floods from small drainage areas in Montana has been in progress since July 1, 1955. The investigation is currently financed under the provisions of an agreement between the Montana State Highway Commission and the U. S. Geological Survey which provides for the full reimbursement of appropriate costs by the Commission through its Planning Survey. The U. S. Bureau of Public Roads also cooperates in the program and reimburses the Highway Commission for approximately three-fourths of the total program cost.

This is the eighth annual progress report prepared to inform the cooperators and other interested parties of the status of the program. The report consists primarily of a tabulation of the annual peak stage and discharge at each of the peak-flow stations and summarizes the activities and progress made during the period October 1, 1961 to September 30, 1962.

The program is under the general supervision of Frank Stermitz, District Engineer, and under the direct supervision of Fred C. Boner, hydraulic engineer, of the U. S. Geological Survey.

Information on outstanding floods and other flow data were furnished on request to Mr. L. W. Hargrove, Hydrologist, Montana State Highway Commission.

PURPOSE OF THE PROGRAM

The purpose of the Small-Area Peak-Flow Highway Program is to collect sufficient basic hydrologic data to define the magnitude and frequency of floods, on a regional basis, for the entire State of Montana. In addition to the peak-flow data collected under this program, data from other programs of the Geological Survey will be used. A statewide flood-frequency report following the 1964 water year is planned, providing sufficient data have been collected to give reliable results. This flood-frequency report will enable the user to determine the magnitude and frequency of floods for various sizes and types of drainage basins, and will be useful in the design of adequate highway drainage structures.

DETAILS OF PROGRAM OPERATION

Station Network

Peak-flow data were collected at 147 gage sites, of which 138 are crest-stage gages and 9 are continuous recording gages. During the 1962 water year, one crest-stage gage was discontinued because a reservoir was constructed upstream from the gage. One crest-stage gage was established; so the total number of active stations remained unchanged. The gaging stations are listed in downstream order in the table of contents and in alphabetical order in the index. Figure 1 shows the approximate location of each gage.

Under a separate cooperative program between the Geological Survey and the Montana State Engineer, peak-flow data were collected at 14 crest-stage gages in eastern Montana. These stations are included in both the downstream and alphabetical listings, and are shown in figure 1.

Most of the crest-stage gages are located on streams which have small drainage basins. Of the 161 stations in operation, 95 have drainage areas smaller than 10 square miles, 50 have drainage areas ranging from 10 to 100 square miles, and 16 have drainages greater than 100 square miles.

Weather reports from three unpaid observers were collected during the water year to supplement the records collected by the U. S. Weather Bureau. The supplemental reports are useful for determining the date of a peak flow on a nearby stream.

Program Activities, 1962 Water Year

Peak flows of high magnitude were quite numerous in the eastern part of Montana during the summer months as a result of frequent rain storms. A few streams had only low-magnitude peak flows, and a few had no flow at all during the entire year.

West of the Continental Divide, peak flows during the water year were generally smaller than those recorded during the previous 2 years.

The collection of peak-flow data continued to be the primary phase of operation during the water year. Each crest-stage and recording gage was inspected regularly for high-water marks and serviced to insure proper operation of the gage. Other visits are made during flood periods, if possible, to measure flood flows. Discharge measurements are often made at the time of regular visits to help define the complete stage-discharge relation at each gaging station. Extra visits are required, when an unmeasured peak flow of appreciable magnitude occurs between routine visits, to obtain the additional field data needed to compute the peak discharge by indirect methods.

During the year, 1,195 inspections were made at the 147 gages in the Highway Program. At the time of these visits, 169 current-meter measurements and 92 estimates of flow were made. Transit-stadia surveys for indirect measurements of flow were made at 12 sites.

Several computations of flow during minor peaks were made at crest-stage gages that are located at highway culverts. When both the upstream and downstream water-surface elevations, the culvert geometry, and the shape of the natural channel in the vicinity of the culvert are known, the stage-discharge relation can be computed from which the discharge at any stage experienced may be determined.

At the 14 crest-stage gages operated in cooperation with the Montana State Engineer, 154 inspections, 32 discharge measurements, and 9 estimates of flow were made during the year.

One visit each year is made to each gage for the purpose of running a level circuit between the gage and several semi-permanent reference marks. This is done to insure that all flood peaks at a station can be adjusted to the same datum in the event a gage is disturbed or destroyed.

The data collected at the original group of about 45 gaging stations in eastern Montana with 6 or more years of peak-flow record have been analyzed for flood-frequency relationships. The findings of that analysis were being reviewed at the time this progress report was being prepared.

An expansion of the rain-gage observer network during 1962 was postponed because of delays in receiving rain gages. The gages have been delivered and the network will be expanded during 1963.

Two determinations of peak discharge were made during the water year at points other than gaging stations. These are listed in table 1 on page 93. One of the indirect measurements of the peak discharge, at Armells Creek near Roy, was made at the request of Mr. Hargrove after a culvert failure.

The second determination was for the peak discharge of Jawbone Creek at Harlowton. A part of the town of Harlowton south of U. S. Highway 12 was flooded. The highway culvert was not damaged.

Program Plans, 1963 Water Year

Expansion of the present program will be made possible by a revised agreement, made effective during the 1963 water year, increasing the monies available for the program from \$16,000 to \$24,000. An addition of about 45 crest-stage gages in the portion of Montana east of the Continental Divide is scheduled shortly after the 1963 spring snowmelt. Reconnaissance and selection of about 40 new gage sites was made in December 1962.

Peak-flow data collection will be continued during the 1963 water year with more emphasis directed toward the defining of stage-discharge relationships at gages not yet rated. Generally, field data will be obtained during routine visits to the gaging stations. Special trips will be made when necessary to obtain additional field data in the event a peak stage of appreciable magnitude occurs.

Measurements of peak flow at points other than gaging stations will be collected where significant damage is reported or the peak discharge may be hydrologically significant. The resources of the Geological Survey do not permit coverage of all reported events, and it is acknowledged that some may escape attention.

PRESENTATION OF DATA

Data pertinent to each gaging station operated under this program are presented on pages 7 to 91 of this report. Also included are the 14 crest-stage gaging stations operated in cooperation with the Montana State Engineer. Each station manuscript includes the station name, location, station number, drainage, period of record, type of gage, cooperator if other than Montana State Highway Commission, and list of the annual maximum gage height and discharge (when available) for each water year of record.

The annual peak discharges shown are preliminary figures and are subject to revision. In many instances, the tables are not complete. The use of the term "unknown" indicates a reliable figure of peak discharge will never be available. A listing of "not determined" means that the peak discharge will be determined at a later date, generally because the stage-discharge relationship has not yet been defined.

1. Long Creek near Lakeview, Mont.

Location.--Lat $44^{\circ}43'$, long $112^{\circ}04'$, in SE $\frac{1}{4}$ sec.10, T.13 S., R.4 W., at bridge on county road, 15 miles northwest of Lakeview.

Station number.--6-114

Drainage area.--33.9 sq mi.

Records available.--May 1959 to

Gage.--Crest-stage gage installed May 12, 1959.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1960	Apr. 6, 1960	3.17	235
1961	Apr. 17, 1961	1.00	48
1962	Apr. 27, 1962	3.42	265

2. Red Rock River tributary near Monida, Mont.

Location.--Lat $44^{\circ}35'$, long $112^{\circ}15'$, in SE $\frac{1}{4}$ sec.30, T.14 S., R.5 W., at county road, 3 miles east of Monida.

Station number.--6-119

Drainage area.--1.00 sq mi.

Records available.--May 1959 to

Gage.--Crest-stage gage installed May 12, 1959.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1960	Apr. 6, 1960	--	a 3
1961	Apr. 17, 1961	b 1.08	a 2
1962	Apr. 19, 1962	b 2.74	a 15

a About.

b Backwater from ice.

3. Traux Creek near Lima, Mont.

Location.--Lat $44^{\circ}37'$, long $112^{\circ}34'$, in NW $\frac{1}{4}$ sec.15, T.14 S., R.8 W., at culvert 300 ft upstream from Interstate Highway 15 and U. S. Highway 91, 2 miles southeast of Lima.

Station number.--6-132

Drainage area.--2.77 sq mi.

Records available.--May 1959 to

Gage.--Crest-stage gage installed May 12, 1959.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1960	March 1960	0.24	Not determined
1961	Mar. 14, 1961	.35	Not determined
1962	Apr. 19, 1962	.85	Not determined

4. Muddy Creek near Dell, Mont.

Location.--Lat $44^{\circ}38'$, long $112^{\circ}48'$, in SW $\frac{1}{4}$ sec.3, T.14 S., R.10 W., half a mile upstream from mouth, 8 miles southwest of Dell.

Station number.--6-134

Drainage area.--62.7 sq mi.

Records available.--May 1959 to

Gage.--Crest-stage gage installed May 12, 1959.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1960	July 6, 1960	2.70	85
1961	Apr. 3, 1961	2.47	68
1962	Apr. 2, 1962	3.72	197

5. Sheep Creek below Muddy Creek, near Dell, Mont.

Location.--Lat $44^{\circ}40'$, long $112^{\circ}46'$, in SE $\frac{1}{4}$ sec.35, T.13 S., R.10 W., $6\frac{1}{2}$ miles southwest of Dell.

Station number.--6-135

Drainage area.--280 sq mi. At site in 1936, 293 sq mi.

Records available.--April to September 1936 and May 1946 to September 1953 (continuous record), June 1959 to

Gage.--Water-stage recorder re-installed June 24, 1959.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1936	--	--	Unknown
1946	May 28, 1946	5.54	379
1947	June 9, 1947	5.66	349
1948	Aug. 1, 1948	5.49	369
1949	Apr. 12, 1949	6.02	477
1950	Apr. 1, 1950	5.68	406
1951	Aug. 4, 1951	4.82	234
1952	Apr. 18, 1952	7.72	909
1953	June 2, 1953	5.23	313
1960	Mar. 26, 1960	4.44	168
1961	Apr. 4, 1961	3.98	84
1962	Apr. 2, 1962	4.83	236

6. Sage Creek tributary near Dell, Mont.

Location.--Lat $44^{\circ}44'$, long $112^{\circ}37'$, in SE $\frac{1}{4}$ sec.31, T.12 S., R.8 W., at bridge on county road, 4 miles east of Dell.

Station number.--6-139

Drainage area.--0.43 sq mi.

Records available.--May 1959 to

Gage.--Crest-stage gage installed May 12, 1959.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1960	March 1960	0.13	Not determined
1961	---	---	(c)
1962	Apr. 2, 1962	.92	Not determined

c No evidence of flow during year.

7. Grasshopper Creek near Dillon, Mont.

Location.--Lat $45^{\circ}07'$, long $112^{\circ}48'$, in NW $\frac{1}{4}$ sec.26, T.8 S., R.10 W., on left bank $1\frac{3}{4}$ miles upstream from mouth and 11 miles southwest of Dillon.

Station number.--6-155

Drainage area.--348 sq mi.

Records available.--March 1921 to September 1929, April 1930 to June 1933, October 1945 to December 1953, March 1955 to September 1958, October 1959 to September 1961 (continuous record), October 1961 to

Gage.--Crest-stage gage installed Oct. 11, 1961. Water-stage recorder, chain or staff gages prior to October 1961.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1921	June 10, 1921	6.60	d 516
1922	May 28, 1922	6.48	d 543
1923	June 23, 1923	5.68	d 283
1924	Apr. 13, 1924	5.05	d 120
1925	June 5, 1925	6.52	d 557
1926	July 8, 1926	5.52	d 197
1927	June 12, 1927	6.2	d 355
1928	May 13, 1928	6.10	d 327
1929	June 18, 1929	5.45	d 172
1930	---	--	Unknown
1931	Apr. 4, 1931	5.02	d 85
1932	June 7, 1932	6.06	d 322
1933	---	--	Unknown
1946	May 29, 1946	2.78	160
1947	Mar. 17, 1947	4.44	640
1948	June 4, 1948	4.51	719
1949	June 2, 1949	3.46	324
1950	June 23, 1950	3.22	252
1951	Mar. 22, 1951	4.11	559
1952	May 16, 1952	3.20	257
1953	June 3, 1953	4.51	719
1954	---	--	Unknown
1955	June 30, 1955	3.39	328
1956	Mar. 24, 1956	6.47	1,870
1957	May 21, 1957	3.75	433
1958	June 5, 1958	4.16	579
1959	---	--	Unknown
1960	Mar. 25, 1960	4.06	539
1961	June 14, 1961	3.14	252
1962	Mar. 27, 1962	3.83	450

d Maximum observed.

8. Beaverhead River tributary near Dillon, Mont.

Location.--Lat 45°13', long 112°40', in SE¼ sec.15, T.7 S., R.9 W., 250 ft upstream from settling basin, 2 miles west of Dillon.

Station number.--6-169

Drainage area.--0.62 sq mi.

Records available.--May 1959 to

Gage.--Crest-stage gage installed May 11, 1959.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1960	Mar. 18, 1960	0.32	Not determined
1961	---	--	(c)
1962	Feb. 2, 1962	.02	Not determined

9. Beaverhead River tributary No. 2 near Dillon, Mont.

Location.--Lat 45°19', long 112°32', in NW¼ sec.13, T.7 S., R.8 W., at culvert on State Highway 41, 9 miles northeast of Dillon.

Station number.--6-182

Drainage area.--0.40 sq mi.

Records available.--May 1959 to

Gage.--Crest-stage gage installed May 7, 1959.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1958	e June 24, 1958	5.04	170
1959	--	--	(c)
1960	Mar. 19, 1960	.41	3
1961	June 12, 1961	.36	2.5
1962	--	--	(c)

c No evidence of flow during year.

e Prior to installation of gage; peak discharge computed from high-water marks along highway embankment at culvert.

10. Idaho Creek near Alder, Mont.

Location.--Lat 45°12', long 112°08', in center sec.30, T.6 S., R.4 W.,
at bridge on county road, 9 miles south of Alder.

Station number.--6-198

Drainage area.--10.8 sq mi.

Records available.--May 1959 to

Gage.--Crest-stage gage installed May 7, 1959.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1960	Mar. 27, 1960	b 2.18	Not determined
1961	Apr. 4, 1961	.87	Not determined
1962	Apr. 25, 1962	2.30	Not determined

11. Moose Creek near Divide, Mont.

Location.--Lat 45°43', long 112°42', in NW $\frac{1}{4}$ sec.34, T.1 S., R.9 W., at
culverts on Interstate Highway 15 and U. S. Highway 91, 3 $\frac{1}{2}$ miles south-
east of Divide.

Station number.--6-253

Drainage area.--41.4 sq mi.

Records available.--May 1959 to

Gage.--Crest-stage gage installed May 11, 1959.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1960	May 7, 1960	1.62	90
1961	Apr. 4, 1961	.79	39
1962	Apr. 19, 1962	1.89	108

b Backwater from ice.

12. Fish Creek near Silverstar, Mont.

Location.--Lat 45°46', long 112°15', in NW $\frac{1}{4}$ sec.8, T.1 S., R.5 W., at bridge on county road, 6 miles north of Silverstar.

Station number.--6-277

Drainage area.--39.5 sq mi.

Records available.--May 1959 to

Gage.--Crest-stage gage installed May 7, 1959.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1959	June 6, 1959	1.15	166
1960	May 13, 1960	.91	105
1961	Apr. 4, 1961	1.13	160
1962	June 3, 1962	.95	115

13. Jefferson River tributary near Whitehall, Mont.

Location.--Lat 45°53', long 112°00', in SE $\frac{1}{4}$ sec.32, T.2 N., R.3 W., at culvert on Interstate Highway 90 and U. S. Highway 10, 5 miles east of Whitehall.

Station number.--6-302

Drainage area.--1.85 sq mi.

Records available.--May 1959 to

Gage.--Crest-stage gage installed May 6, 1959.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1960	--	--	(c)
1961	--	--	(c)
1962	Aug. 29, 1962	a 0.2	Not determined

a About

c No evidence of flow during year.

14. Jefferson River tributary No. 2 near Whitehall, Mont.

Location.--Lat 45°53', long 111°59', in SE¼ sec.33, T.2 N., R.3 W., at culvert on county road, 6 miles east of Whitehall.

Station number.--6-303

Drainage area.--4.50 sq mi.

Records available.--October 1957 to

Gage.--Crest-stage gage installed May 7, 1959.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1958	e June 24, 1958	4.45	169
1959	e Apr. 6, 1959	2.37	71
1960	--	--	(c)
1961	Sept. 11, 1961	1.32	34
1962	--	--	(c)

15. Sand Creek at Sappington, Mont.

Location.--Lat 45°47', long 111°45', in SW¼ sec.32, T.1 N., R.1 W., three quarters of a mile southeast of Sappington.

Station number.--6-347

Drainage area.--9.41 sq mi.

Records available.--May 1959 to

Gage.--Crest-stage gage installed May 6, 1959.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1960	Apr. 9, 1960	1.36	50
1961	Aug. 14, 1961	(OG) 2.0	124
1962	Aug. 25, 1962	5.4	2,130

c No evidence of flow during year.

e Prior to installation of gage.

16. Jefferson River tributary No. 3 near Sappington, Mont.

Location.--Lat 45°50', long 111°42', in SW $\frac{1}{4}$ sec.14, T.1 N., R.1 W., at culvert on Interstate Highway 90 and U. S. Highway 10, 4 miles northeast of Sappington.

Station number.--6-348

Drainage area.--1.14 sq mi.

Records available.--May 1959 to

Gage.--Crest-stage gage installed May 6, 1959.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1960	Feb. 1, 1960	0.10	0.1
1961	Aug. 14, 1961	.95	12
1962	Mar. 6, 1962	.65	6

17. Jefferson River tributary No. 4 near Three Forks, Mont.

Location.--Lat 45°54', long 111°37', in SW $\frac{1}{4}$ sec.28, T.2 N., R.1 E., at culverts on Interstate Highway 90 and U. S. Highway 10, 3 miles west of Three Forks.

Station number.--6-366

Drainage area.--0.53 sq mi.

Records available.--May 1959 to

Gage.--Crest-stage gage installed May 6, 1959.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1960	--	--	(c)
1961	--	--	(c)
1962	Mar. 6, 1962	0.75	Not determined

c No evidence of flow during year.

18. Jefferson River tributary No. 5 near Three Forks, Mont.

Location.--Lat 45°55', long 111°36', in NE $\frac{1}{4}$ sec.21, T.2 N., R.1 E., at culvert on State Highway 287, 3 miles west of Three Forks.

Station number.--6-367

Drainage area.--3.69 sq mi.

Records available.--May 1959 to

Gage.--Crest-stage gage installed May 6, 1959.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1960	--	--	(c)
1961	--	--	(c)
1962	Mar. 6, 1962	0.61	Not determined

19. Squaw Creek near Gallatin Gateway, Mont.

Location.--Lat 45°26', long 111°13', in SW $\frac{1}{4}$ sec.34, T.4 S., R.4 E., at private bridge, 10 miles south of Gallatin Gateway.

Station number.--6-432

Drainage area.--40.4 sq mi.

Records available.--May 1959 to

Gage.--Crest-stage gage installed May 5, 1959.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1959	June 7, 1959	2.20	a 420
1960	May 12, 1960	1.66	147
1961	May 26, 1961	1.47	200
1962	June 13, 1962	1.34	168

a About

c No evidence of flow during year.

20. Logger Creek near Gallatin Gateway, Mont.

Location.--Lat $45^{\circ}27'$, long $111^{\circ}14'$, in SW $\frac{1}{4}$ sec.28, T.4 S., R.4 E., at culvert on U. S. Highway 191, 10 miles south of Gallatin Gateway.

Station number.--6-433

Drainage area.--2.48 sq mi.

Records available.--May 1959 to

Gage.--Crest-stage gage installed May 5, 1959.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1959	June 7, 1959	1.03	20
1960	May 12, 1960	.69	9
1961	May 26, 1961	.34	6
1962	June 13, 1962	.73	18

21. East Gallatin River near Bozeman, Mont.

Location.--Lat $45^{\circ}38'35''$, long $110^{\circ}55'35''$, in SE $\frac{1}{4}$ sec.24, T.2 S., R.6 E., 6 miles east of Bozeman.

Station number.--6-465

Drainage area.--49.0 sq mi.

Records available.--November 1951 to September 1953 (continuous record), 1956-57 (miscellaneous measurements only), May 1959 to

Gage.--Water-stage recorder re-installed May 5, 1959.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1952	Apr. 19, 1952	4.08	421
1953	June 3, 1953	4.65	608
1959	Apr. 1, 1959	3.9	337
1960	May 8, 1960	3.64	248
1961	May 2, 1961	3.03	90
1962	Apr. 16, 1962	3.42	285

22. Pitcher Creek near Bozeman, Mont.

Location.--Lat 45°39', long 110°56', in NW¼ sec.24, T.2 S., R.6 E., at culvert on county road, 5 miles east of Bozeman.

Station number.--6-467

Drainage area.--2.33 sq mi.

Records available.--1951-53, miscellaneous measurements of base flow only.
May 1959 to

Gage.--Crest-stage gage installed May 6, 1959.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1960	May 13, 1960	1.25	14
1961	May 27, 1961	.03	1
1962	Apr. 24, 1962	.89	9

23. Bear Canyon Creek near Bozeman, Mont.

Location.--Lat 45°37'35", long 110°55'45", in NW¼ sec.36, T.2 S., R.6 E., 6 miles southeast of Bozeman.

Station number.--6-470

Drainage area.--17.0 sq mi.

Records available.--November 1951 to September 1953 (continuous record),
May 1959 to

Gage.--Water-stage recorder re-installed May 5, 1959.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1952	May 26, 1952	2.84	149
1953	June 3, 1953	3.40	450
1959	May 1, 1959	2.2	a 150
1960	May 12, 1960	2.62	202
1961	May 22, 1961	1.77	46
1962	July 14, 1962	2.74	175

24. Castle Creek tributary near Ringling, Mont.

Location.--Lat $46^{\circ}22'$, long $111^{\circ}06'$, in NE $\frac{1}{4}$ sec.21, T.7 N., R.5 E., at culverts on U. S. Highway 12, 15 miles northwest of Ringling.

Station number.--6-562

Drainage area.--2.59 sq mi.

Records available.--May 1959 to

Gage.--Crest-stage gage installed May 22, 1959.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1960	May 4, 1960	1.45	23
1961	Apr. 25, 1961	.91	12
1962	Apr. 19, 1962	2.74	28

25. Cabin Creek near Townsend, Mont.

Location.--Lat $46^{\circ}20'$, long $111^{\circ}13'$, in NW $\frac{1}{4}$ sec.27, T.7 N., R.4 E., 100 ft upstream from mouth, $14\frac{1}{2}$ miles east of Townsend.

Station number.--6-563

Drainage area.--12.6 sq mi.

Records available.--May 1959 to

Gage.--Crest-stage gage installed May 22, 1959.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1960	June 4, 1960	2.00	Not determined
1961	June 22, 1961	.14	2
1962	May 22, 1962	.37	8

26. Deep Creek below North Fork Deep Creek, near Townsend, Mont.

Location.--Lat $46^{\circ}20'$, long $111^{\circ}17'$, in SE $\frac{1}{4}$ sec.25, T.7 N., R.3 E., at bridge on county road, 11 miles east of Townsend.

Station number.--6-566

Drainage area.--87.7 sq mi.

Records available.--May 1959 to

Gage.--Crest-stage gage installed May 18, 1959.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1959	June 7, 1959	2.15	290
1960	June 4, 1960	2.00	254
1961	May 24, 1961	1.60	83
1962	May 22, 1962	1.66	175

27. Mitchell Gulch near East Helena, Mont.

Location.--Lat $46^{\circ}34'$, long $111^{\circ}49'$, in NW $\frac{1}{4}$ sec.2, T.9 N., R.2 W., at culvert on U. S. Highway 12, 4.7 miles east of East Helena.

Station number.--6-587

Drainage area.--8.09' sq mi.

Records available.--May 1959 to

Gage.--Crest-stage gage installed May 14, 1959.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1959	e March. 1959	0.96	Not determined
1960	Mar. 19, 1960	.32	6
1961	June 29, 1961	.27	2
1962	Mar. 20, 1962	.43	12

e Prior to installation of gage.

28. Jackson Creek near East Helena, Mont.

Location.--Lat 46°28'20", long 111°51'10", in SE $\frac{1}{4}$ sec.4, T.8 N., R.2 W.,
300 ft upstream from mouth, 8 $\frac{1}{2}$ miles southeast of East Helena.

Station number.--6-617

Drainage area.--3.44 sq mi.

Records available.--June 1960 to

Gage.--Staff gage installed June 22, 1960 and crest-stage gage installed
July 8, 1960.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1960	--	--	Unknown
1961	May 1, 1961	1.48	4
1962	June 2, 1962	2.49	16

29. Crystal Creek near East Helena, Mont.

Location.--Lat 46°29'00", long 111°51'40", in NW $\frac{1}{4}$ sec.4, T.8 N., R.2 W.,
a quarter of a mile upstream from mouth, 8 miles southeast of East Helena.

Station number.--6-618

Drainage area.--3.77 sq mi.

Records available.--June 1960 to

Gage.--Staff gage installed June 22, 1960 and crest-stage gage installed
July 8, 1960.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1960	--	--	Unknown
1961	May 1, 1961	1.59	a 5
1962	June 2, 1962	1.55	11

a About.

30. McClellan Creek at City diversion dam, near East Helena, Mont.

Location.--Lat 46°32'00", long 111°52'40", in SE $\frac{1}{4}$ sec.17, T.9 N., R.2 W.,
on wingwall of diversion dam, 4 $\frac{1}{2}$ miles southeast of East Helena.

Station number.--6-619

Drainage area.--33.2 sq mi.

Records available.--June 1960 to

Gage.--Staff gage installed June 23, 1960 and crest-stage gage installed
July 7, 1960.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1960	e May-June 1960	3.01	Not determined
1961	May 27, 1961	.65	48
1962	June 2, 1962	2.48	175

31. Little Porcupine Creek tributary near Helena, Mont.

Location.--Lat 46°35', long 112°16', in SW $\frac{1}{4}$ sec.29, T.10 N., R.5 W., at
culvert on U. S. Highway 12, 11 miles west of Helena.

Station number.--6-627

Drainage area.--0.48 sq mi.

Records available.--May 1959 to

Gage.--Crest-stage gage installed May 14, 1959.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1959	June 6, 1959	0.45	1.5
1960	May 12, 1960	.39	1.2
1961	May 22, 1961	.17	.4
1962	June 2, 1962	.49	1.7

e Prior to installation of gage.

32. Lyons Creek near Wolf Creek, Mont.

Location.--Lat $46^{\circ}56'$, long $112^{\circ}08'$, in NE $\frac{1}{4}$ sec.29, T.14 N., R.4 W., 135 ft upstream from mouth, $5\frac{1}{2}$ miles southwest of Wolf Creek.

Station number.--6-712

Drainage area.--29.4 sq mi.

Records available.--May 1959 to

Gage.--Crest-stage gage installed May 15, 1959.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1959	June 6, 1959	0.81	63
1960	June 2, 1960	.81	63
1961	May 28, 1961	.12	13
1962	May 22, 1962	1.57	158

33. Dog Creek near Craig, Mont.

Location.--Lat $47^{\circ}05'$, long $112^{\circ}00'$, in NW $\frac{1}{4}$ sec.4, T.15 N., R.3 W., at bridge on county road, 2 miles west of Craig.

Station number.--6-714

Drainage area.--15.9 sq mi.

Records available.--May 1959 to

Gage.--Crest-stage gage installed May 15, 1959.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1960	Mar. 19, 1960	0.41	a 30
1961	May 23, 1961	4.40	1,160
1962	Mar. 17, 1962	2.42	114

34. Wegner Creek at Craig, Mont.

Location.--Lat 47°05', long 111°57', in NW $\frac{1}{4}$ sec.11, T.15 N., R.3 W., at bridge on Interstate Highway 15 and U. S. Highway 91, 0.9 miles east of Craig.

Station number.--6-716

Drainage area.--35.0 sq mi.

Records available.--May 1959 to

Gage.--Crest-stage gage installed May 15, 1959.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1960	June 2, 1960	0.59	46
1961	July 6, 1961	2.54	408
1962	Apr. 19, 1962	.33	24

35. Five Mile Creek near White Sulphur Springs, Mont.

Location.--Lat 46°37', long 110°45', in SW $\frac{1}{4}$ sec.20, T.10 N., R.8 E., at culvert on U.S. Highway 12, 8 miles northeast of White Sulphur Springs.

Station number.--6-756

Drainage area.--6.00 sq mi.

Records available.--May 1959 to

Gage.--Crest-stage gage installed May 22, 1959.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1960	May 1, 1960	1.25	Not determined
1961	—	—	(c)
1962	Mar. 27, 1962	1.38	Not determined

c No evidence of flow during year.

36. Newland Creek near White Sulphur Springs, Mont.

Location.--Lat 46°44', long 110°50', near line between secs.9 and 10, T.11 N., R.7 E., 15 miles upstream from mouth, 13 miles north of White Sulphur Springs.

Station number.--6-760

Drainage area.--6.74 sq mi.

Records available.--September 1945 to November 1953 (continuous record),
June 1959 to

Gage.--Water-stage recorder re-installed June 19, 1959.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1946	June 11, 17, 1946	0.72	d 4.9
1947	May 6, 1947	2.18	18
1948	May 8, 1948	2.64	29
1949	June 1, 1949	1.48	6.2
1950	May 28, 1950	1.64	9.5
1951	May 13, 1951	1.62	11
1952	May 4, 1952	1.66	14
1953	June 4, 1953	3.50	56
1960	May 19, 1960	2.39	5.1
1961	May 31, 1961	2.18	3.2
1962	May 29, 1962	2.68	15

37. Sheep Creek near Neihart, Mont.

Location.--Lat 46°48', long 110°42', in SE $\frac{1}{4}$ sec.15, T.12 N., R.8 E., at culvert on U. S. Highway 89, 10 miles south of Neihart.

Station number.--6-767

Drainage area.--5.30 sq mi.

Records available.--May 1959 to

Gage.--Crest-stage gage installed May 22, 1959.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1960	May 12, 1960	1.12	38
1961	May 27, 1961	1.11	37
1962	May 21, 1962	1.37	49

d Maximum observed.

38. Nugget Creek near Neihart, Mont.

Location.--Lat $46^{\circ}47'$, long $110^{\circ}42'$, in NE $\frac{1}{4}$ sec.27, T.12 N., R.8 E., at culvert on U. S. Highway 89, 11 miles south of Neihart.

Station number.--6-768

Drainage area.--1.48 sq mi.

Records available.--May 1959 to

Gage.--Crest-stage gage installed May 22, 1959.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1959	June 7, 1959	1.05	14
1960	May 12, 1960	.38	5
1961	May 27, 1961	.30	4
1962	May 25, 1962	.50	6

39. Smith River tributary near Eden, Mont.

Location.--Lat $47^{\circ}18'$, long $111^{\circ}26'$, in NW $\frac{1}{4}$ sec.24, T.18 N., R.2 E., at bridge on county road, 7 $\frac{1}{2}$ miles northwest of Eden.

Station number.--6-777

Drainage area.--1.63 sq mi.

Records available.--May 1959 to

Gage.--Crest-stage gage installed May 25, 1959.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1960	Mar. 17, 1960	0.32	Not determined
1961	--	--	(c)
1962	June 15, 1962	.72	Not determined

c No evidence of flow during year.

40. Goodman Coulee near Eden, Mont.

Location.--Lat 47°20', long 111°25', in center sec.12, T.18 N., R.2 E., at culvert on county road, 8 miles northwest of Eden.

Station number.--6-778

Drainage area.--21.8 sq mi.

Records available.--May 1959 to

Gage.--Crest-stage gage installed May 25, 1959.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1959	e Apr. 22, 1959	1.57	49
1960	May 1, 1960	1.92	41
1961	--	--	(c)
1962	Mar. 19, 1962	4.17	127

41. Beaver Creek at Gibson Dam, near Augusta, Mont.

Location.--Lat 47°36', long 112°45', in SE $\frac{1}{4}$ sec.4, T.21 N., R.9 W., at bridge on county road, 19 miles northwest of Augusta.

Station number.--6-796

Drainage area.--20.3 sq mi.

Records available.--May 1959 to

Gage.--Crest-stage gage installed May 28, 1959.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1959	June 6, 1959	0.78	110
1960	May 12, 1960	2.28	458
1961	May 7, 1961	.37	55
1962	May 26, 1962	2.45	496

c No evidence of flow during year.

e Prior to installation of gage; peak discharge computed from high-water marks along highway embankment at culvert.

42. Sun River tributary near Great Falls, Mont.

Location.--Lat 47°32', long 111°24', in SW $\frac{1}{4}$ sec.31, T.21 N., R.3 E., at bridge on Interstate Highway 15 and U. S. Highways 89 and 91, 4 miles northwest of Great Falls.

Station number.--6-893

Drainage area.--21.1 sq mi.

Records available.--August 1955 to

Gage.--Crest-stage gage installed Aug. 15, 1955.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1956	Mar. 20, 1956	1.20	1
1957	June 16, 1957	1.05	.1
1958	July 3, 1958	2.74	156
1959	Mar. 2, 1959	2.52	116
1960	May 23, 1960	1.28	6
1961	--	--	(c)
1962	May 21, 1962	3.06	a 150

43. North Fork Dry Fork Marias River near Dupuyer, Mont.

Location.--Lat 48°09', long 112°28', in NE $\frac{1}{4}$ sec.35, T.28 N., R.7 W., at culvert on county road, 4 miles southeast of Dupuyer.

Station number.--6-997

Drainage area.--20.2 sq mi.

Records available.--May 1959 to

Gage.--Crest-stage gage installed May 28, 1959.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1960	Mar. 17, 1960	b 1.24	a 70
1961	May 7, 1961	.29	10
1962	Mar. 19, 1962	.99	61

a About

b Backwater from ice

c No evidence of flow during year

44. Heines Coulee tributary near Valier, Mont.

Location.--Lat 48°15', long 112°14', in NE $\frac{1}{4}$ sec.27, T.29 N., R.5 W., at culvert on county road, 4 miles south of Valier.

Station number.--6-1002

Drainage area.--0.60 sq mi.

Records available.--May 1959 to

Gage.--Crest-stage gage installed May 27, 1959.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1960	May 1, 1960	0.92	9
1961	May 17, 1961	.54	4
1962	Jan. 29, 1962	b .41	a 2

45. Lone Man Coulee near Valier, Mont.

Location.--Lat 48°14', long 112°14', in SE $\frac{1}{4}$ sec.27, T.29 N., R.5 W., at culvert on county road, 5 miles south of Valier.

Station number.--6-1003

Drainage area.--14.1 sq mi.

Records available.--May 1959 to

Gage.--Crest-stage gage installed May 27, 1959.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1960	May 1, 1960	0.58	32
1961	May 17, 1961	.36	22
1962	Jan. 29, 1962	b 2.87	a 15

a About

b Backwater from ice

46. Dry Fork Coulee tributary near Loma, Mont.

Location.--Lat 47°57', long 110°33', in SW $\frac{1}{4}$ sec.2, T.25 N., R.9 E., at culvert on county road, 2 miles west of Loma.

Station number.--6-1021

Drainage area.--0.84 sq mi.

Records available.--May 1959 to

Gage.--Crest-stage gage installed May 25, 1959.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1959	e Mar. 1, 1959	4.02	71
1960	Mar. 17, 1960	.41	a 2
1961	May 31, 1961	b 1.42	a 1
1962	May 21, 1962	.85	6

47. Marias River tributary at Loma, Mont.

Location.--Lat 47°57', long 110°31', in SW $\frac{1}{4}$ SE $\frac{1}{4}$ sec.1, T.25 N., R.9 E., at bridge on county road, five eighths of a mile west of Loma.

Station number.--6-1022

Drainage area.--1.62 sq mi.

Records available.--August 1955 to

Gage.--Crest-stage gage installed Aug. 18, 1955.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1956	1956	0.8	Not determined
1957	Mar. 1, 1957	1.74	Not determined
1958	Mar. 29, 1958	.68	a 4
1959	Mar. 1, 1959	2.9	Not determined
1960	Mar. 17, 1960	1.50	a 6
1961	—	—	(c)
1962	May 21, 1962	2.11	Not determined

a About

b Backwater from debris or ice.

c No evidence of flow during year.

48. Marias River tributary No. 2 at Loma, Mont.

Location.--Lat 47°57', long 110°30', in NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec.12, T.25 N., R.9 E., at culvert on approach to U. S. Highway 87, a quarter of a mile north of Loma.

Station number.--6-1023

Drainage area.--0.25 sq mi.

Records available.--August 1955 to

Gage.--Crest-stage gage installed Aug. 18, 1955.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1956	May 27, 1956	2.97	Not determined
1957	Mar. 1, 1957	2.46	Not determined
1958	Mar. 29, 1958	1.40	a 1
1959	February 1959	1.01	Not determined
1960	Mar. 17, 1960	1.73	Not determined
1961	--	--	(c)
1962	Mar. 17, 1962	1.55	Not determined

49. Judith River tributary near Utica, Mont.

Location.--Lat 46°53', long 110°16', in SW $\frac{1}{4}$ sec.13, T.13 N., R.11 E., at bridge on county road, 10 miles southwest of Utica.

Station number.--6-1099

Drainage area.--7.17 sq mi.

Records available.--May 1959 to

Gage.--Crest-stage gage installed May 21, 1959.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1960	Mar. 18, 1960	0.65	Not determined
1961	--	--	(c)
1962	June 14, 1962	1.00	Not determined

a About

c No evidence of flow during year.

50. Judith River tributary No. 2 near Utica, Mont.

Location.--Lat 46°54', long 110°15', in SE $\frac{1}{4}$ sec.7, T.13 N., R.12 E., at bridge on county road, 9 $\frac{1}{2}$ miles southwest of Utica.

Station number.--6-1099.5

Drainage area.--6.97 sq mi.

Records available.--May 1959 to

Gage.--Crest-stage gage installed May 21, 1959.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1960	Mar. 18, 1960	0.70	Not determined
1961	--	--	(c)
1962	June 14, 1962	.90	Not determined

51. Casino Creek tributary near Lewistown, Mont.

Location.--Lat 47°00', long 109°26', in NE $\frac{1}{4}$ sec.9, T.14 N., R.18 E., at culverts on county road, 5 miles south of Lewistown.

Station number.--6-1117

Drainage area.--3.53 sq mi.

Records available.--May 1959 to

Gage.--Crest-stage gage installed May 21, 1959.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1960	Mar. 18, 1960	0.94	Not determined
1961	--	--	(c)
1962	May 21, 1962	3.24	Not determined

c No evidence of flow during year.

52. Antelope Creek tributary near Harlowton, Mont.

Location.--Lat 46°39', long 109°59', in NE $\frac{1}{4}$ sec.8, T.10 N., R.14 E., at culvert on county road, 18.3 miles northwest of Harlowton.

Station number.--6-1206

Drainage area.--0.47 sq mi.

Records available.--July 1955 to

Gage.--Crest-stage gage installed July 13, 1955.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1956	June 15, 1956	1.36	13
1957	March 1957	.56	7
1958	--	--	(c)
1959	March 1959	1.72	3
1960	Mar. 18, 1960	2.04	6
1961	June 13, 1961	.25	(c)
1962	Mar. 26, 1962	1.40	1

53. Antelope Creek tributary near mouth, near Harlowton, Mont.

Location.--Lat 46°37', long 109°57', in NW $\frac{1}{4}$ sec.22, T.10 N., R.14 E., at bridge on county road, 16.3 miles northwest of Harlowton.

Station number.--6-1207

Drainage area.--1.92 sq mi.

Records available.--July 1955 to

Gage.--Crest-stage gage installed July 12, 1955.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1956	Mar. 17, 1956	1.60	207
1957	June 16, 1957	1.51	188
1958	May 23, 1958	.17	17
1959	Mar. 20, 1959	.75	65
1960	Mar. 18, 1960	.42	33
1961	--	--	(c)
1962	Mar. 26, 1962	.28	20

c No evidence of flow during year.

54. Antelope Creek tributary No. 2 near Harlowton, Mont.

Location.--Lat 46°28', long 109°49', in SE $\frac{1}{4}$ sec.10, T.8 N., R.15 E., at E. S. Bacon ranch, 1 $\frac{1}{2}$ miles north of Harlowton.

Station number.--6-1208

Drainage area.--21.2 sq mi.

Records available.--July 1955 to

Gage.--Crest-stage gage installed July 13, 1955.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1956	June 15, 1956	3.51	820
1957	June 21, 1957	1.95	190
1958	June 1958	.36	35
1959	Mar. 20, 1959	.57	80
1960	--	(f)	<25
1961	--	(f)	<25
1962	June 16, 1962	5.56	3,230

55. Antelope Creek at Harlowton, Mont.

Location.--Lat 46°26', long 109°49', in NE $\frac{1}{4}$ sec.22, T.8 N., R.15 E., on overpass on U. S. Highway 12 at Harlowton.

Station number.--6-1209

Drainage area.--88.7 sq mi.

Records available.--July 1955 to

Gage.--Crest-stage gage installed July 12, 1955.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1950	e June 17, 1950	16.73	24,400
1954	e Aug. 15, 1954	4.52	1,600
1955	e June 26, 1955	3.01	591
1956	June 15, 1956	3.28	800
1957	June 21, 1957	1.52	170
1958	--	(f)	<30
1959	--	(f)	<30
1960	--	(f)	<30
1961	--	(f)	<30
1962	June 16, 1962	4.02	1,280

e Prior to installation of gage.

f Peak discharge did not reach bottom of gage.

56. Currant Creek near Roundup, Mont.

Location.--Lat 46°22', long 108°39', in SW $\frac{1}{4}$ sec.7, T.7 N., R.25 E., at bridge on U. S. Highway 12, 7 miles southwest of Roundup.

Station number.--6-1263

Drainage area.--220 sq mi.

Records available.--May 1958 to

Gage.--Crest-stage gage installed May 9, 1958.

Cooperation.--Montana State Engineer

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1958	July 19, 1958	2.12	a 40
1959	Mar. 1, 1959	6.65	780
1960	--	--	Unknown
1961	July 21, 1961	1.86	31
1962	June 15, 1962	5.28	395

57. Box Elder Creek tributary near Winnett, Mont.

Location.--Lat 47°01', long 108°10', in SW $\frac{1}{4}$ NW $\frac{1}{4}$ sec.34, T.15 N., R.28 E., a quarter of a mile north of State Highway 20 and 8 miles east of Winnett.

Station number.--6-1277

Drainage area.--16.2 sq mi.

Records available.--July 1955 to

Gage.--Crest-stage gage installed July 14, 1955.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1955	Aug. 23, 1955	2.20	132
1956	June 18, 1956	2.11	123
1957	Feb. 28, 1957	.66	27
1958	July 31, 1958	2.86	193
1959	Mar. 1, 1959	3.86	412
1960	Mar. 18, 1960	3.37	275
1961	Aug. 10, 1961	.90	40
1962	June 15, 1962	b8.3	a 125

a About

b Backwater from ice.

58. North Fork McDonald Creek tributary near Heath, Mont.

Location.--Lat 47°04', long 109°13', in NE $\frac{1}{4}$ sec.17, T.15 N., R.20 E., at culvert on U. S. Highway 87 and State Highway 20, 5 miles northeast of Heath.

Station number.--6-1282

Drainage area.--2.24 sq mi.

Records available.--May 1959 to

Gage.--Crest-stage gage installed May 19, 1959.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1960	Mar. 18, 1960	1.04	Not determined
1961	Oct. 1, 1960	.02	Not determined
1962	May 21, 1962	1.21	Not determined

59. Alkali Creek near Heath, Mont.

Location.--Lat 47°05', long 109°09', in SE $\frac{1}{4}$ sec.11, T.15 N., R.20 E., at bridge on county road, 7 $\frac{1}{2}$ miles northeast of Heath.

Station number.--4-1283

Drainage area.--3.76 sq mi.

Records available.--May 1959 to

Gage.--Crest-stage gage installed May 19, 1959.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1960	Mar. 18, 1960	1.83	a 60
1961	Feb. 20, 1961	b .62	a 15
1962	June 15, 1962	7.4	757

a About

b Backwater from ice.

60. McDonald Creek at Winnett, Mont.

Location.--Lat 47°00', long 108°21', in NW¼ sec.7, T.14 N., R.27 E., at bridge on State Secondary Highway 244, three-quarters of a mile south of Winnett.

Station number.--6-1285

Drainage area.--421 sq mi.

Records available.--April 1930 to December 1932, February 1934 to September 1945 and February 1953 to September 1956 (continuous record), October 1956 to

Gage.--Crest-stage gage installed Sept. 19, 1960. Prior to Oct. 1, 1956 wire-weight gage and Oct. 1, 1956 to March 1960, crest-stage gage 1 mile downstream at different datum.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1931	Mar. 1-3, 1931	13.30	d 4.2
1932	June 9, 1932	20.40	d 562
1934	June 9, 1934	18.12	d 351
1935	July 8, 1935	18.30	d 371
1936	Mar. 5, 1936	--	a 220
1937	July 13, 1937	18.75	401
1938	July 8, 1938	18.71	d 328
1939	June 19, 1939	4.55	270
1940	Mar. 3, 1940	--	a 75
1941	June 28, 1941	5.42	482
1942	May 15 or 16, 1942	7.5	900
1943	June 8, 18, 1943	5.59	d 549
1944	June 20, 1944	7.40	853
1945	June 7, 1945	2.48	d 180
1953	June 10, 1953	5.66	d 424
1954	Aug. 5, 1954	3.00	47
1955	Apr. 11, 1955	4.39	241
1956	Aug. 3, 1956	2.55	88
1957	Mar. 19, 1957	2.20	67
1958	July 19, 1958	3.23	150
1959	Mar. 1, 1959	b 6.84	Not determined
1960	Mar. 19, 1960	4.44	Not determined
1961	Mar. 20, 1961	1.25	.1
1962	June 17, 1962	4.20	485

a About

b Backwater from ice or beaver dam

d Maximum observed.

61. Gorman Coulee near Cat Creek, Mont.

Location.--Lat 47°01', long 108°06', in SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec.31, T.15 N., R.29 E.,
at culvert on State Highway 20, 6 miles southwest of Cat Creek.

Station number.--6-1287

Drainage area.--2.32 sq mi.

Records available.--July 1955 to

Gage.--Crest-stage gage installed July 14, 1955.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage Height (ft)</u>	<u>Discharge (cfs)</u>
1955	Aug. 23, 1955	5.59	385
1956	June 18, 1956	2.73	126
1957	Aug. 30, 1957	1.37	43
1958	July 19, 1958	2.09	83
1959	June 26, 1959	1.84	68
1960	--	--	Unknown
1961	--	--	(c)
1962	May 16, 1962	1.06	28

62. Gorman Coulee tributary near Cat Creek, Mont.

Location.--Lat 47°01', long 108°06', in SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec.31, T.15 N., R.29 E.,
at culvert on State Highway 20, 6 miles southwest of Cat Creek.

Station number.--6-1288

Drainage area.--0.81 sq mi.

Records available.--May 1955 to

Gage.--Crest-stage gage installed May 27, 1955.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1955	Aug. 23, 1955	3.02	159
1956	June 18, 1956	.96	32
1957	Aug. 30, 1957	1.24	44
1958	July 31, 1958	2.52	122
1959	Sept. 22, 1959	.28	10
1960	Mar. 18, 1960	.37	12
1961	Aug. 10, 1961	.50	15
1962	May 16, 1962	.55	17

c No evidence of flow during year.

63. Cat Creek near Cat Creek, Mont.

Location.--Lat 47°03', long 108°01', in SW $\frac{1}{4}$ sec.23, T.15 N., R.29 E., at culvert on county road, 2 $\frac{1}{2}$ miles south of Cat Creek.

Station number.--6-1306

Drainage area.--36.5 sq mi.

Records available.--April 1958 to

Gage.--Crest-stage gage installed Apr. 19, 1958.

Cooperation.--Montana State Engineer.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1958	Aug. 15, 1958	2.76	92
1959	Mar. 12, 1959	4.58	170
1960	Mar. 18, 1960	5.85	379
1961	June 23, 1961	1.27	40
1962	June 16, 1962	6.19	748

64. Second Creek tributary near Jordan, Mont.

Location.--Lat 47°12', long 106°48', in NW $\frac{1}{4}$ NW $\frac{1}{4}$ sec.31, T.17 N., R.39 E., at culvert on State Highway 22, 11 miles southeast of Jordan.

Station number.--6-1308

Drainage area.--0.75 sq mi.

Records available.--March 1958 to

Gage.--Crest-stage gage installed Mar. 18, 1958.

Cooperation.--Montana State Engineer.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1954	e Aug. 18, 1954	9.64	281
1958	--	--	(c)
1959	Mar. 17, 1959	1.22	Not determined
1960	Mar. 18, 1960	1.75	Not determined
1961	--	--	(c)
1962	Mar. 18, 1962	1.10	Not determined

c No evidence of flow during year

e Prior to installation of gage; peak discharge computed from high-water marks along highway embankment at culvert.

65. Second Creek tributary No. 2 near Jordan, Mont.

Location.--Lat 47°12', long 106°49', in NW¼ sec.25, T.17 N., R.38 E., at culvert on State Highway 22, 9½ miles southeast of Jordan.

Station number.--6-1308.5

Drainage area.--1.90 sq mi.

Records available.--March 1958 to

Gage.--Crest-stage gage installed Mar. 18, 1958.

Cooperation.--Montana State Engineer

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1958	June 1958	0.86	Not determined
1959	Mar. 17, 1959	1.7	Not determined
1960	Mar. 18, 1960	1.98	Not determined
1961	Sept. 11, 1961	-.37	a 2
1962	Mar. 18, 1962	.51	Not determined

66. Second Creek tributary No. 3 near Jordan, Mont.

Location.--Lat 47°13', long 106°50', in NE¼ sec.23, T.17 N., R.38 E., at culvert on State Highway 22, 8½ miles southeast of Jordan.

Station number.--6-1309.

Drainage area.--0.60 sq mi.

Records available.--July 1958 to

Gage.--Crest-stage gage installed July 23, 1958.

Cooperation.--Montana State Engineer.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1958	--	--	(c)
1959	Mar. 3, 1959	1.77	Not determined
1960	Mar. 18, 1960	1.03	Not determined
1961	June 1, 1961	.23	a 3
1962	July 14, 1962	.81	Not determined

a About

c No evidence of flow during year.

67. Little Dry Creek near Van Norman, Mont.

Location.--Lat 47°21', long 106°22', in SE $\frac{1}{4}$ sec.4, T.18 N., R.42 E., at bridge on State Highway 20, 1 $\frac{1}{2}$ miles southeast of Van Norman.

Station number.--6-1309.5

Drainage area.--1,224 sq mi.

Records available.--May 1958 to

Gage.--Crest-stage gage installed May 5, 1958.

Cooperation.--Montana State Engineer.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1958	July 6, 1958	0.83	160
1959	Mar. 18, 1959	6.80	5,200
1960	Mar. 20, 1960	b 7.6	a 4,000
1961	Sept. 11, 1961	3.08	1,320
1962	Mar. 22, 1962	2.32	850

68. Livermore Creek near Babb, Mont.

Location.--Lat 48°46', long 113°11', in NE $\frac{1}{4}$ sec.28, T.35 N., R.12 W., at bridge on State Secondary Highway 464, 13 $\frac{1}{2}$ miles southeast of Babb.

Station number.--6-1322.5

Drainage area.--25.0 sq mi.

Records available.--August 1961 to

Gage.--Crest-stage gage installed Aug. 13, 1961.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1961	--	--	Unknown
1962	Apr. 13, 1962	3.43	152

a About

b Backwater from ice.

69. Middle Fork Milk River near Babb, Mont.

Location.--Lat 48°51', long 113°13', in SE $\frac{1}{4}$ sec.30, T.36 N., R.12 W., at culvert on State Secondary Highway 464, 10 miles east of Babb.

Station number.--6-1323

Drainage area.--14.0 sq mi.

Records available.--August 1961 to

Gage.--Crest-stage gage installed Aug. 13, 1961

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1961	--	--	Unknown
1962	Apr. 13, 1962	2.62	107

70. Dry Fork Milk River near Babb, Mont.

Location.--Lat 48°50', long 113°12', in SE $\frac{1}{4}$ sec.32, T.36 N., R.12 W., at bridge on State Secondary Highway 464, 11 miles east of Babb.

Station number.--6-1324

Drainage area.--17.4 sq mi.

Records available.--August 1961 to

Gage.--Crest-stage gage installed Aug. 13, 1961.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1961	--	--	Unknown
1962	Apr. 13, 1962	3.96	394

71. Milk River near Del Bonita, Mont.

Location.--Lat 48°57', long 112°45', in center of N $\frac{1}{2}$ sec.23, T.37 N., R.9 W.,
at bridge on State Secondary Highway 483, 3 $\frac{1}{2}$ miles southeast of customs
post at Del Bonita.

Station number.--6-1327

Drainage area.--325 sq mi.

Records available.--August 1961 to

Gage.--Crest-stage gage installed Aug. 12, 1961.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1961	--	--	Unknown
1962	Apr. 14, 1962	b 4.13	a 800

72. Sage Creek tributary at Hingham, Mont.

Location.--Lat 48°34', long 110°25', in center sec.3, T.32 N., R.10 E.,
at culvert on farm road, half a mile northeast of Hingham.

Station number.--6-1379

Drainage area.--1.08 sq mi.

Records available.--May 1959 to

Gage.--Crest-stage gage installed May 27, 1959.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1960	Mar. 17, 1960	1.51	14
1961	--	--	(c)
1962	June 14, 1962	5.46	299

a About

b Backwater from ice.

c No evidence of flow during year.

73. South Fork Spring Coulee near Havre, Mont.

Location.--Lat 48°25', long 109°50', in NE $\frac{1}{4}$ sec.31, T.31 N., R.15 E., at culvert on county road, 12 miles southwest of Havre.

Station number.--6-1387

Drainage area.--6.47 sq mi.

Records available.--May 1959 to

Gage.--Crest-stage gage installed May 26, 1959.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1960	Mar. 17, 1960	2.04	33
1961	May 31, 1961	.04	2
1962	Mar. 18, 1962	1.68	25

74. Spring Coulee near Havre, Mont.

Location.--Lat 48°25', long 109°52', in NW $\frac{1}{4}$ sec.25, T.31 N., R.14 E., at culverts on county road, 13 miles southwest of Havre.

Station number.--6-1388

Drainage area.--17.8 sq mi.

Records available.--May 1959 to

Gage.--Crest-stage gage installed May 26, 1959.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1959	e Mar. 11, 1959	5.60	257
1960	Mar. 17, 1960	--	a 10
1961	--	--	(c)
1962	Mar. 18, 1962	1.32	48

a About

c No evidence of flow during year.

e Prior to installation of gage; peak discharge computed from high-water marks along highway embankment at culvert.

75. Big Sandy Creek near Assinniboine, Mont.

Location.--Lat 48°32', long 109°50', in SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec.18, T.32 N., R.15 E.,
2 miles northwest of Assinniboine.

Station number.--6-1395

Drainage area.--1,805 sq mi.

Records available.--February 1946 to November 1953 (continuous record),
April 1955 to

Gage.--Water-stage recorder re-installed Apr. 9, 1955.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1946	Feb. 27, 1946	--	g 36
1947	Mar. 21, 1947	9.68	h 2,080
1948	Mar. 22, 1948	--	g 17
1949	Mar. 31, 1949	--	g 5
1950	Mar. 29, 1950	3.88	208
1951	Mar. 23, 1951	5.01	391
1952	Apr. 3, 1952	14.70	5,570
1953	June 6, 1953	6.56	714
1954	--	--	Unknown
1955	Apr. 11, 1955	6.48	698
1956	Mar. 30, 1956	b 6.47	a 550
1957	Feb. 28, 1957	b 5.13	a 250
1958	Mar. 28, 1958	--	a 500
1959	Mar. 11, 1959	7.80	1,100
1960	Mar. 25, 1960	a 4.1	215
1961	June 3, 1961	3.64	132
1962	June 12, 1962	2.54	6

a About

b Backwater from ice.

g Maximum daily.

h Maximum recorded.

76. Bullhook Creek near Havre, Mont.

Location.--Lat 48°31', long 109°38', in NE $\frac{1}{4}$ sec.27, T.32 N., R.16 E., at bridge on county road, 3 $\frac{1}{2}$ miles south of Havre.

Station number.--6-1404

Drainage area.--39.6 sq mi.

Records available.--May 1959 to

Gage.--Crest-stage gage installed May 26, 1959.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1960	Mar. 18, 1960	1.84	Not determined
1961	--	--	(c)
1962	Mar. 18, 1962	1.49	Not determined

77. Milk River tributary near Lohman, Mont.

Location.--Lat 48°35', long 109°26', in SW $\frac{1}{4}$ sec.30, T.33 N., R.18 E., at culvert on U. S. Highway 2, 1.2 miles west of Lohman.

Station number.--6-1419

Drainage area.--0.16 sq mi.

Records available.--May 1959 to

Gage.--Crest-stage gage installed May 26, 1959.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1960	Mar. 15, 1960	0.24	1.5
1961	--	--	(c)
1962	--	--	(c)

c No evidence of flow during year.

78. Black Coulee near Malta, Mont.

Location.--Lat 48°13', long 108°02', in NE $\frac{1}{4}$ sec.1, T.28 N., R.28 E., at bridge on State Highway 19, 12 miles southwest of Malta.

Station number.--6-1551

Drainage area.--6.64 sq mi.

Records available.--July 1955 to

Gage.--Crest-stage gage installed July 27, 1955.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1956	July 3, 1956	1.98	Not determined
1957	Mar. 19, 1957	1.85	Not determined
1958	April 1958	1.02	Not determined
1959	Mar. 13, 1959	2.93	Not determined
1960	Mar. 18, 1960	3.21	Not determined
1961	May 30, 1961	1.04	Not determined
1962	July 18, 1962	2.96	Not determined

79. Alkali Creek near Malta, Mont.

Location.--Lat 48°16', long 107°58', near center sec.16, T.29 N., R.29 E., at bridge on State Highway 19, 8 $\frac{1}{4}$ miles southwest of Malta.

Station number.--6-1552

Drainage area.--162 sq mi.

Records available.--July 1955 to

Gage.--Crest-stage gage installed July 27, 1955.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1956	Mar. 19, 1956	b 0.85	a 45
1957	Mar. 21, 1957	1.69	355
1958	Mar. 25, 1958	.82	104
1959	Mar. 13, 1959	b 3.0	a 800
1960	--	--	Unknown
1961	--	(f)	<220
1962	July 14, 1962	2.68	750

a About

b Backwater from ice.

f Peak discharge did not reach bottom of gage.

80. Disjardin Coulee near Malta, Mont.

Location.--Lat 48°16', long 107°58', in SE $\frac{1}{4}$ NW $\frac{1}{4}$ sec.16, T.29 N., R.29 E., at bridge on State Highway 19, 8 miles southwest of Malta.

Station number.--6-1553

Drainage area.--3.42 sq mi.

Records available.--July 1955 to

Gage.--Crest-stage gage installed July 26, 1955.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1956	Aug. 5, 1956	3.22	160
1957	Mar. 19, 1957	1.02	22
1958	--	--	(c)
1959	Mar. 18, 1959	1.62	132
1960	Mar. 18, 1960	.61	32
1961	May 30, 1961	.44	20
1962	July 18, 1962	2.23	a 200

81. South Fork Taylor Creek near Malta, Mont.

Location.--Lat 48°19', long 107°55', in SE $\frac{1}{4}$ sec.26, T.30 N., R.29 E., at bridge on State Highway 19, 3 $\frac{1}{2}$ miles southwest of Malta.

Station number.--6-1554

Drainage area.--5.08 sq mi.

Records available.--July 1955 to

Gage.--Crest-stage gage installed July 28, 1955.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1956	Mar. 19, 1956	1.75	52
1957	Mar. 19, 1957	1.43	22
1958	--	--	(c)
1959	July 13, 1959	1.94	84
1960	Mar. 18, 1960	1.89	75
1961	July 30, 1961	.90	2
1962	July 18, 1962	1.54	65

a About

c No evidence of flow during year.

82. Unger Creek near Vandalia, Mont.

Location.--Lat 48°22', long 106°48', in SW $\frac{1}{4}$ sec.9, T.30 N., R.38 E., at bridge on U. S. Highway 2, 4 $\frac{1}{2}$ miles northeast of Vandalia.

Station number.--6-1723

Drainage area.--11.1 sq mi.

Records available.--April 1958 to

Gage.--Crest-stage gage installed Apr. 15, 1958.

Cooperation.--Montana State Engineer.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1958	March 1958	0.92	10
1959	Apr. 1, 1959	1.41	32
1960	Mar. 20, 1960	2.32	225
1961	June 13, 1961	1.02	13
1962	July 14, 1962	3.28	575

83. Mooney Coulee near Tampico, Mont.

Location.--Lat 48°17', long 106°42', in NW $\frac{1}{4}$ sec.7, T.29 N., R.39 E., at bridge on U. S. Highway 2, 5 $\frac{1}{2}$ miles east of Tampico.

Station number.--6-1723.5

Drainage area.--12.8 sq mi.

Records available.--August 1960 to

Gage.--Crest-stage gage installed Aug. 24, 1960.

Cooperation.--Montana State Engineer.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1960	--	--	Unknown
1961	June 13, 1961	2.37	400
1962	July 14, 1962	2.20	220

84. West Fork Wolf Creek near Lustre, Mont.

Location.--Lat 48°23', long 106°00', in SW $\frac{1}{4}$ sec.3, T.30 N., R.44 E., at bridge on county road, 5 miles west of Lustre.

Station number.--6-1756

Drainage area.--6.57 sq mi.

Records available.--June 1955 to

Gage.--Crest-stage gage installed June 9, 1955.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1956	June 26, 1956	0.89	Not determined
1957	Apr. 23, 1957	2.24	Not determined
1958	--	--	(c)
1959	Mar. 25, 1959	.68	Not determined
1960	Mar. 18, 1960	1.99	Not determined
1961	Apr. 3, 1961	.33	Not determined
1962	Mar. 25, 1962	.90	Not determined

85. East Fork Wolf Creek near Lustre, Mont.

Location.--Lat 48°24', long 105°48', in SE $\frac{1}{4}$ sec.30, T.31 N., R.46 E., at culverts on county road, 4 miles east of Lustre.

Station number.--6-1757

Drainage area.--9.61 sq mi.

Records available.--June 1955 to

Gage.--Crest-stage gage installed June 9, 1955.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1956	April 1956	3.24	Not determined
1957	March 1957	3.28	Not determined
1958	March 1958	.58	Not determined
1959	June 21, 1959	.45	Not determined
1960	Mar. 19, 1960	--	a 150
1961	Mar. 5, 1961	--	a 130
1962	June 14, 1962	--	74

a About

c No evidence of flow during year.

86. Wolf Creek tributary near Wolf Point, Mont.

Location.--Lat 48°14', long 105°46', in sec.29, T.29 N., R.46 E., at bridge on county road, 15 miles northwest of Wolf Point.

Station number.--6-1758

Drainage area.--2.46 sq mi.

Records available.--June 1955 to

Gage.--Crest-stage gage installed June 24, 1955.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1955	July 1955	0.50	Not determined
1956	April 1956	1.61	Not determined
1957	March 1957	.89	Not determined
1958	--	--	(c)
1959	Mar. 25, 1959	.97	Not determined
1960	--	--	Unknown
1961	Mar. 5, 1961	.33	Not determined
1962	June 14, 1962	2.46	Not determined

87. Wolf Creek tributary No. 2 near Wolf Point, Mont.

Location.--Lat 48°12', long 105°45', in sec.11, T.28 N., R.46 E., at bridge on county road, 9½ miles northwest of Wolf Point.

Station number.--6-1759

Drainage area.--6.54 sq mi.

Records available.--June 1955 to

Gage.--Crest-stage gage installed June 24, 1955.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1955	July 1955	1.50	Not determined
1956	April 1956	1.92	Not determined
1957	July 14, 1957	2.03	Not determined
1958	Mar. 24, 1958	1.62	Not determined
1959	June 20, 1959	3.81	979
1960	Mar. 18, 1960	3.24	Not determined
1961	May 21, 1961	3.00	Not determined
1962	July 1, 1962	4.78	Not determined

c No evidence of flow during year.

88. Wolf Creek near Wolf Point, Mont.

Location.--Lat 48°06', long 105°41', N $\frac{1}{2}$ sec.17, T.27 N., R.47 E., 2 miles northwest of Wolf Point.

Station number.--6-1765

Drainage area.--251 sq mi.

Records available.--August 1908 to July 1914 and March 1950 to September 1953 (continuous record), May 1955 to

Gage.--Water-stage recorder re-installed May 6, 1955.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1909	--	--	Unknown
1910	Mar. 13-15, 1910	3.9	d 110
1911	Mar. 19-23, 1911	4.45	d 154
1912	Apr. 1, 1912	5.9	d 270
1913	--	--	Unknown
1914	--	--	Unknown
1950	Apr. 18, 1950	5.30	188
1951	Apr. 5, 1951	6.06	324
1952	Apr. 7, 1952	9.25	7,050
1953	June 3, 1953	7.29	1,010
1954	Apr. 4 or 5, 1954	12.9	9,780
1956	Mar. 23, 1956	--	a 60
1957	July 14, 1957	5.29	a 180
1958	Apr. 1, 1958	3.30	a 6
1959	June 21, 1959	6.74	a 330
1960	Mar. 20, 1960	9.71	Not determined
1961	May 22, 1961	5.97	120
1962	June 15, 1962	7.95	1,440

a About

d Maximum observed

89. East Fork Duck Creek near Brockway, Mont.

Location.--Lat 47°12', long 105°47', in sec.31, T.17 N., R.47 E., at bridge on county road, 8 miles south of Brockway.

Station number.--6-1770.5

Drainage area.--12.4 sq mi.

Records available.--June 1955 to

Gage.--Crest-stage gage installed June 13, 1955.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1955	July 12, 1955	1.46	106
1956	Mar. 2, 1956	1.08	60
1957	July 14, 1957	3.64	505
1958	July 21, 1958	.19	8
1959	Mar. 18, 1959	2.47	273
1960	Aug. 16, 1960	1.65	140
1961	May 31, 1961	1.62	134
1962	July 14, 1962	1.97	190

90. Duck Creek near Brockway, Mont.

Location.--Lat 47°15', long 105°49', in SE $\frac{1}{4}$ sec.11, T.17 N., R.46 E., at bridge on county road, 5 miles southwest of Brockway.

Station number.--6-1771

Drainage area.--54.0 sq mi.

Records available.--1921-22, miscellaneous measurements only. May 1957 to

Gage.--Crest-stage gage installed May 21, 1957.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1957	July 14, 1957	4.00	640
1958	July 3, 1958	1.05	40
1959	Mar. 18, 1959	5.15	1,000
1960	Mar. 20, 1960	3.57	520
1961	June 1, 1961	.06	a 1
1962	June 6, 1962	2.59	270

91. Redwater Creek at Brockway, Mont.

Location.--Lat 47°19', long 105°45', in NW $\frac{1}{4}$ sec.20, T.18 N., R.47 E., at bridge on county road, a quarter of a mile northwest of Brockway.

Station number.--6-1771.5

Drainage area.--216 sq mi.

Records available.--January 1958 to

Gage.--Crest-stage gage installed Jan. 16, 1958.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1957	e July 14, 1957	5.8	1,220
1958	July 3, 1958	1.86	130
1959	Mar. 18, 1959	5.53	1,130
1960	Mar. 20, 1960	b 6.94	a 1,000
1961	June 1, 1961	2.26	200
1962	June 6, 1962	5.80	1,220

92. Tusler Creek near Brockway, Mont.

Location.--Lat 47°18', long 105°39', in SE $\frac{1}{4}$ sec.24, T.18 N., R.47 E., at bridge on county road, 4 miles east of Brockway.

Station number.--6-1772

Drainage area.--90.2 sq mi.

Records available.--October 1956 to

Gage.--Crest-stage gage installed Oct. 12, 1956

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1957	Feb. 27, 1957	1.66	200
1958	July 21, 1958	-.22	14
1959	Mar. 18, 1959	b 2.16	a 150
1960	Mar. 20, 1960	1.96	280
1961	Mar. 6, 1961	-.04	18
1962	July 19, 1962	3.36	430

a About

b Backwater from ice.

e Prior to installation of gage.

93. Tusler Creek tributary near Brockway, Mont.

Location.--Lat 47°18', long 105°41', in NE $\frac{1}{4}$ sec.26, T.18 N., R.47 E., at bridge on county road, 4 miles east of Brockway.

Station number.--6-1772.5

Drainage area.--3.17 sq mi.

Records available.--September 1956 to

Gage.--Crest-stage gage installed Sept. 15, 1956.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1957	July 14, 1957	0.81	Not determined
1958	--	--	(c)
1959	Mar. 18, 1959	.46	Not determined
1960	Aug. 16, 1960	1.10	Not determined
1961	--	--	(c)
1962	--	--	(c)

94. Redwater Creek tributary near Brockway, Mont.

Location.--Lat 47°21', long 105°41', in NE $\frac{1}{4}$ SE $\frac{1}{4}$ sec.2, T.18 N., R.47 E., at culvert on State Highway 20, 4 miles northeast of Brockway.

Station number.--6-1773

Drainage area.--0.29 sq mi.

Records available.--January 1958 to

Gage.--Crest-stage gage installed Jan. 15, 1958.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1954	e Aug. 18, 1954	7.40	72
1957	e July 14, 1957	9.40	83
1958	--	--	(c)
1959	Mar. 18, 1959	b 4.35	a 20
1960	Mar. 20, 1960	1.17	12
1961	July 29, 1961	1.65	16
1962	June 6, 1962	.62	3

a About

b Backwater from ice

c No evidence of flow during year.

e Prior to installation of gage; peak discharge computed from high-water marks along highway embankment at culvert.

95. South Fork Dry Ash Creek near Circle, Mont.

Location.--Lat 47°18', long 105°35', in NW¼ sec.27, T.18 N., R.48 E., at bridge on county road, 9¼ miles south of Circle.

Station number.--6-1773.5

Drainage area.--5.74 sq mi.

Records available.--June 1955 to

Gage.--Crest-stage gage installed June 13, 1955.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1955	July 12, 1955	2.18	56
1956	Mar. 1, 1956	1.37	17
1957	Feb. 26, 1957	1.58	52
1958	June 3, 1958	.23	3
1959	Mar. 22, 1959	2.12	79
1960	Aug. 16, 1960	2.40	85
1961	--	--	(c)
1962	July 14, 1962	1.12	22

96. McCune Creek near Circle, Mont.

Location.--Lat 47°21', long 105°35', in NW¼ sec.3, T.18 N., R.48 E., near bridge on county road, 5 miles south of Circle.

Station number.--6-1774

Drainage area.--29.9 sq mi.

Records available.--June 1955 to

Gage.--Crest-stage gage installed June 13, 1955.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1955	July 12, 1955	4.32	128
1956	Mar. 20, 1956	3.31	52
1957	July 14, 1957	4.93	175
1958	June 3, 1958	.98	6
1959	Mar. 22, 1959	--	Unknown
1960	Mar. 20, 1960	5.44	a 150
1961	Mar. 6, 1961	1.36	a 5
1962	July 19, 1962	7.26	235

a About

c No evidence of flow during year.

97. Big Muddy Creek at Plentywood, Mont.

Location.--Lat 48°46', long 104°35', in NW $\frac{1}{4}$ NW $\frac{1}{4}$ sec.30, T.35 N., R.55 E., at Plentywood.

Station number.--6-1830

Drainage area.--850 sq mi.

Records available.--April 1948 to September 1953 (continuous record), June 1955 to

Gage.--Crest-stage gage installed June 10, 1955. Recording gage April 1948 to September 1953.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1948	Apr. 19, 1948	15.64	2,850
1949	Mar. 30, 1949	10.49	1,020
1950	Apr. 18, 1950	12.27	1,620
1951	May 3, 1951	11.38	1,360
1952	Apr. 8, 1952	19.00	7,240
1953	June 30, 1953	19.40	8,000
1954	--	--	Unknown
1955	--	(f)	< 210
1956	Mar. 22, 1956	b 6.63	a 300
1957	July 16, 1957	6.58	413
1958	Mar. 29, 1958	12.92	1,630
1959	June 30, 1959	10.61	945
1960	Mar. 22, 1960	b17.37	a 3,500
1961	May 30, 1961	6.03	260
1962	Mar. 27, 1962	11.99	1,250

a About

b Backwater from ice.

f Peak discharge did not reach bottom of gage.

98. Box Elder Creek near Plentywood, Mont.

Location.--Lat 48°50', long 104°30', in sec.34, T.36 N., R.55 E., at culverts on county road, 4 miles northeast of Plentywood.

Station number.--6-1831

Drainage area.--9.40 sq mi.

Records available.--June 1955 to

Gage.--Crest-stage gage installed June 10, 1955.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1956	March 1956	0.25	0
1957	July 23, 1957	7.24	328
1958	Mar. 30, 1958	1.88	22
1959	June 26, 1959	3.89	126
1960	Mar. 21, 1960	6.24	265
1961	July 30, 1961	1.58	41
1962	Mar. 26, 1962	2.79	65

99. Box Elder Creek at damsite, near Plentywood, Mont.

Location.--Lat 48°48', long 104°33', in NE¼ sec.17, T.35 N., R.55 E., at old damsite, 1½ miles north of Plentywood.

Station number.--6-1832

Drainage area.--19.9 sq mi.

Records available.--June 1955 to

Gage.--Crest-stage gage installed June 10, 1955.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1953	e June 30, 1953	6.52	6,530
1955	e Mar. 29, 1955	2.42	890
1956	--	--	(c)
1957	July 23, 1957	3.56	1,600
1958	Mar. 30, 1958	.75	210
1959	June 26, 1959	1.38	430
1960	Mar. 22, 1960	2.27	820
1961	Mar. 20, 1961	1.26	395
1962	Mar. 26, 1962	1.59	530

c No evidence of flow during year.

e Prior to installation of gage.

100. Spring Creek near Plentywood, Mont.

Location.---Lat $48^{\circ}49'$, long $104^{\circ}27'$, in SW $\frac{1}{4}$ sec.6, T.35 N., R.55 E., at culvert on county road, 5 miles northeast of Plentywood.

Station number.---6-1833

Drainage area.---7.05 sq mi.

Records available.---June 1955 to

Gage.---Crest-stage gage installed June 10, 1955.

Annual maximum data.---

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1955	July 7, 1955	0.69	5
1956	--	--	(c)
1957	July 23, 1957	2.77	76
1958	Mar. 30, 1958	1.49	25
1959	June 26, 1959	1.30	20
1960	Mar. 21, 1960	5.19	240
1961	July 30, 1961	1.20	17
1962	Mar. 26, 1962	1.32	24

101. Spring Creek at Highway 16, near Plentywood, Mont.

Location.---Lat $48^{\circ}46'$, long $104^{\circ}31'$, in SE $\frac{1}{4}$ sec.21, T.35 N., R.55 E., at bridge on State Highway 16, $1\frac{1}{2}$ miles east of Plentywood.

Station number.---6-1834

Drainage area.---16.9 sq mi.

Records available.---June 1955 to

Gage.---Crest-stage gage installed June 23, 1955.

Annual maximum data.---

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1955	--	--	(c)
1956	Apr. 3, 1956	0.74	4
1957	July 23, 1957	3.38	540
1958	Mar. 30, 1958	2.40	230
1959	June 26, 1959	3.70	660
1960	May 24, 1960	3.56	600
1961	Mar. 20, 1961	1.02	10
1962	Mar. 26, 1962	2.85	375

c No evidence of flow during year.

102. Yellowstone River tributary near Greycliff, Mont.

Location.--Lat 45°44', long 109°43', in SE $\frac{1}{4}$ sec.23, T.1 S., R.16 E., at culvert on Interstate Highway 90 and U. S. Highway 10, 4 miles south-east of Greycliff.

Station number.--6-2015.5

Drainage area.--2.72 sq mi.

Records available.--May 1959 to

Gage.--Crest-stage gage installed May 5, 1959.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1960	--	--	(c)
1961	--	--	(c)
1962	Feb. 8, 1962	0.45	Not determined

103. Bridger Creek near Greycliff, Mont.

Location.--Lat 45°41', long 109°43', in NW $\frac{1}{4}$ sec.2, T.2 S., R.16 E., at bridge on county road, 6 miles southeast of Greycliff.

Station number.--6-2016

Drainage area.--61.5 sq mi.

Records available.--May 1959 to

Gage.--Crest-stage gage installed May 5, 1959.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1960	May 1960	0.62	18
1961	March 1961	-.03	5
1962	May 26, 1962	1.36	Not determined

c No evidence of flow during year.

104. Work Creek near Reed Point, Mont.

Location.--Lat 45°42', long 109°38', in SE $\frac{1}{4}$ sec.33, T.1 S., R.17 E., at bridge on county road, 4 miles west of Reed Point.

Station number.--6-2016.5

Drainage area.--32.5 sq mi.

Records available.--May 1959 to

Gage.--Crest-stage gage installed May 4, 1959.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1959	Sept. 21, 1959	2.3	a 100
1960	May 1960	--	a 5
1961	--	--	(c)
1962	June 13, 1962	4.08	406

105. Hump Creek near Reed Point, Mont.

Location.--Lat 45°42', long 109°35', in NE $\frac{1}{4}$ sec.35, T.1 S., R.17 E., at bridge on Interstate Highway 90 and U. S. Highway 10, 2 miles west of Reed Point.

Station number.--6-2017

Drainage area.--7.61 sq mi.

Records available.--May 1959 to

Gage.--Crest-stage gage installed May 4, 1959.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1960	Mar. 19, 1960	0.50	15
1961	--	--	(c)
1962	June 13, 1962	2.96	307

a About

c No evidence of flow during year.

106. Berry Creek near Columbus, Mont.

Location.--Lat 45°42', long 109°23', in NW $\frac{1}{4}$ sec.33, T.1 S., R.19 E., at bridge on county road, 8 miles northwest of Columbus.

Station number.--6-2017.5

Drainage area.--23.5 sq mi.

Records available.--May 1959 to

Gage.--Crest-stage gage installed May 4, 1959.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1958	e July 7, 1958	4.54	620
1959	e Mar. 1, 1959	3.86	283
1960	June 15, 1960	.02	Not determined
1961	May 15, 1961	.10	Not determined
1962	July 31, 1962	6.62	Not determined

107. Allen Creek near Park City, Mont.

Location.--Lat 45°36', long 109°03', in NE $\frac{1}{4}$ sec.7, T.3 S., R.22 E., about 200 ft upstream from Cove Ditch flume, 7 miles west of Park City.

Station number.--6-2017.7

Drainage area.--7.17 sq mi.

Records available.--June 1961 to

Gage.--Crest-stage gage installed June 15, 1961.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1961	e May 24, 1961	5.68	1,580
1962	Feb. 1, 1962	1.30	40

e Prior to installation of gage.

108. Wets Creek near Billings, Mont.

Location.--Lat 45°38', long 108°24', in SW¼ sec.28, T.2 S., R.27 E., at bridge on county road, 19 miles southeast of Billings.

Station number.--6-2162

Drainage area.--8.14 sq mi.

Records available.--May 1955 to

Gage.--Crest-stage gage installed May 26, 1955.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1955	Aug. 25, 1955	--	a 5
1956	Feb. 22, 1956	3.23	65
1957	June 8, 1957	1.66	62
1958	July 2, 1958	.50	14
1959	June 4, 1959	1.14	39
1960	May 2, 1960	2.50	Not determined
1961	May 21, 1961	.40	10
1962	Mar. 9, 1962	1.92	76

109. West Buckeye Creek near Billings, Mont.

Location.--Lat 45°39', long 108°24', in NE¼ sec.21, T.2 S., R.27 E., at bridge on county road, 17 miles southeast of Billings.

Station number.--6-2163

Drainage area.--1.54 sq mi.

Records available.--May 1955 to

Gage.--Crest-stage gage installed May 26, 1955.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1955	Aug. 25, 1955	1.54	17
1956	May 29, 1956	2.24	92
1957	May 12, 1957	1.81	185
1958	July 2, 1958	1.31	83
1959	June 4, 1959	.68	15
1960	May 2, 1960	1.16	60
1961	May 24, 1961	.80	22
1962	Mar. 9, 1962	1.03	44

110. Pryor Creek near Billings, Mont.

Location.--Lat 45°43', long 108°19', in sec.30, T.1 S., R.28 E., at bridge on Interstate Highway 90 and U. S. Highway 87, 11 miles southeast of Billings.

Station number.--6-2165

Drainage area.--435 sq mi.

Records available.--September 1911 to September 1924 and March 1938 to December 1953 (continuous record), May 1955 to

Gage.--Crest-stage gage installed May 26, 1955. Wire-weight gage September 1911 to September 1924 and March 1938 to December 1953.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1912	July 3, 1912	11.2	d 930
1913	a Mar. 30, 1913	12.54	1,130
1914	June 26, 1914	9.3	d 595
1915	June 12, 1915	9.7	d 645
1916	May 22, 1916	7.01	d 333
1917	June 5, 1917	10.44	d 750
1918	Mar. 27, 1918	8.35	d 480
1919	Aug. 2, 1919	7.30	d 344
1920	May 12, 1920	10.37	d 740
1921	June 9, 1921	9.60	d 635
1922	May 11, 1922	7.65	d 400
1923	Sept. 30, 1923	9.25	d 590
1924	Apr. 4, 1924	10.04	d 705
1938	June 24, 1938	7.9	1,230
1939	June 18, 1939	3.35	d 332
1940	Apr. 16, 1940	2.83	d 208
1941	Sept. 8, 1941	4.68	d 607
1942	May 14, 1942	9.2	1,500
1943	Mar. 26, 1943	--	g 1,000
1944	June 19, 1944	7.66	d 1,150
1945	June 11, 1945	4.80	625
1946	June 12, 1946	3.98	d 489
1947	Mar. 19, 1947	--	g 890
1948	Apr. 20, 1948	3.95	d 464
1949	June 3, 1949	2.22	d 133
1950	Feb. 25, 1950	--	g 230
1951	Mar. 22, 1951	b 9.82	d 761
1952	May 22, 1952	4.25	d 424
1953	June 7, 1953	2.43	d 145
1954	--	--	Unknown
1955	June 16, 1955	3.44	286
1956	Feb. 22, 1956	b 9.12	a 800
1957	June 8, 1957	6.14	825
1958	Feb. 20, 1958	3.26	262
1959	Mar. 2, 1959	4.65	508
1960	May 2, 1960	9.9	1,700
1961	Sept. 20, 1961	3.44	288
1962	Mar. 9, 1962	6.20	840

a About

b Backwater from ice or beaver dam.

d Maximum observed

g Maximum daily

111. Little Porcupine Creek near Forsyth, Mont.

Location.--Lat 46°18', long 106°34', in NE $\frac{1}{4}$ sec.3, T.6 N., R.41 E., at bridge on county road, 6 miles northeast of Forsyth.

Station number.--6-2950.5

Drainage area.--614 sq mi.

Records available.--May 1958 to

Gage.--Crest-stage gage installed May 9, 1958.

Cooperation.--Montana State Engineer.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1958	June 3, 1958	4.9	1,480
1959	Mar. 20, 1959	7.08	2,650
1960	Mar. 20, 1960	7.17	2,700
1961	Sept. 20, 1961	8.14	3,320
1962	June 15, 1962	4.53	1,310

112. Rosebud Creek near Kirby, Mont.

Location.--Lat 45°14', long 106°57', in NE $\frac{1}{4}$ sec.16, T.7 S., R.39 E., at culvert on private road, 7 miles south of Kirby.

Station number.--6-2951

Drainage area.--34.2 sq mi.

Records available.--April 1959 to

Gage.--Crest-stage gage installed Apr. 15, 1959.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1960	Mar. 19, 1960	1.78	55
1961	--	--	(c)
1962	June 16, 1962	1.45	44

c No evidence of flow during year.

113. Ridgewalker Creek near Busby, Mont.

Location.--Lat 45°36', long 106°49', in NE $\frac{1}{4}$ sec.8, T.3 S., R.40 E., at bridge on State Highway 8, 8 miles east of Busby.

Station number.--6-2951.5

Drainage area.--2.24 sq mi.

Records available.--April 1959 to

Gage.--Crest-stage gage installed Apr. 15, 1959.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1959	March 1959	--	<5
1960	Mar. 20, 1960	0.83	Not determined
1961	July 20, 1961	.40	Not determined
1962	July 27, 1962	1.40	Not determined

114. Whitedirt Creek near Lane Deer, Mont.

Location.--Lat 45°36', long 106°44', in NE $\frac{1}{4}$ sec.2, T.3 S., R.40 E., at bridge on county road, 4 $\frac{1}{2}$ miles west of Lane Deer.

Station number.--6-2952

Drainage area.--1.58 sq mi.

Records available.--April 1959 to

Gage.--Crest-stage gage installed Apr. 15, 1959.

Annual maximum data.--

<u>Water Year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1959	March 1959	--	a 5
1960	Mar. 20, 1960	0.59	Not determined
1961	Sept. 10, 1961	.32	Not determined
1962	February 1962	.53	Not determined

115. Rosebud Creek near Forsyth, Mont.

Location.--Lat 46°11'50", long 106°28'25", in SW $\frac{1}{4}$ sec.9, T.5 N., R.42 E., 10 miles southeast of Forsyth.

Station number.--6-2960

Drainage area.--1,260 sq mi.

Records available.--May 1947 to December 1953 (continuous record), July 1955 to

Gage.--Water-stage recorder re-installed July 15, 1955.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1948	July 21, 1948	8.41	382
1949	Mar. 8, 1949	8.96	418
1950	June 9, 1950	7.90	250
1951	Sept. 1, 1951	8.42	280
1952	Mar. 29, 1952	7.81	269
1953	May 30, 1953	10.27	d 596
1954	--	--	Unknown
1955	--	--	< 50
1956	March 1956	8.78	a 350
1957	June 17, 1957	8.78	342
1958	March 1958	--	Not determined
1959	Mar. 3, 1959	--	a 570
1960	March 1960	--	Unknown
1961	Sept. 10, 1961	9.58	435
1962	June 7, 1962	9.16	378

116. Spring Creek near Decker, Mont.

Location.--Lat 45°05', long 106°50', in NW $\frac{1}{4}$ sec.33, T.8 S., R.40 E., at bridge on county road, 5 miles north of Decker.

Station number.--6-3069

Drainage area.--36.3 sq mi.

Records available.--May 1958 to

Gage.--Crest-stage gage installed May 9, 1958.

Cooperation.--Montana State Engineer

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1958	June 7, 1958	3.4	184
1959	Mar. 17, 1959	1.19	45
1960	Mar. 19, 1960	1.31	49
1961	--	--	(c)
1962	June 16, 1962	6.59	Not determined

a About

c No evidence of flow during year.

d Maximum observed.

117. Leaf Rock Creek near Kirby, Mont.

Location.--Lat 45°11', long 106°55', in center sec.35, T.7 S., R.39 E., at culvert on county road, 10 miles south of Kirby.

Station number.--6-3069.5

Drainage area.--6.04 sq mi.

Records available.--April 1959 to

Gage.--Crest-stage gage installed Apr. 15, 1959.

Annual maximum data.--

<u>Water year</u>		<u>Date</u>	<u>Gage height (ft.)</u>	<u>Discharge (cfs)</u>
1958	e	June 7, 1958	6.77	222
1959		--	--	Unknown
1960		Mar. 19, 1960	5.03	168
1961		--	--	(c)
1962		June 16, 1962	6.37	216

118. Basin Creek tributary near Volborg, Mont.

Location.--Lat 45°53', long 105°40', in NW¼ sec.31, T.2 N., R.49 E., at culvert on county road, 3½ miles north of Volborg.

Station number.--6-3082

Drainage area.--0.14 sq mi.

Records available.--July 1955 to

Gage.--Crest-stage gage installed July 23, 1955.

Annual maximum data.--

<u>Water year</u>		<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1955		July 29, 1955	0.24	20
1956		--	--	(c)
1957		--	--	(c)
1958		July 2, 1958	6.96	390
1959		March 1959	--	a 2
1960		Mar. 21, 1960	.97	12
1961		--	--	(c)
1962		June 17, 1962	2.76	36

a About

c No evidence of flow during year.

e Prior to installation of gage; peak discharge computed from high-water marks along highway embankment at culvert.

119. Basin Creek near Volborg, Mont.

Location.--Lat 45°53', long 105°39', in NW¼ sec.32, T.2 N., R.49 E., at bridge on U. S. Highway 212, 4 miles north of Volborg.

Station number.--6-3083

Drainage area.--10.9 sq mi.

Records available.--July 1955 to

Gage.--Crest-stage gage installed July 23, 1955.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1955	July 29, 1955	1.1	20
1956	Aug. 27, 1956	5.76	953
1957	Apr. 24, 1957	3.45	300
1958	July 2, 1958	5.79	965
1959	Mar. 11, 1959	1.87	75
1960	Mar. 21, 1960	5.26	770
1961	Sept. 10, 1961	1.04	18
1962	Feb. 11, 1962	3.18	250

120. Sand Creek near Broadus, Mont.

Location.--Lat 45°26', long 105°26', in SE¼ sec.5, T.5 S., R.51 E., at culverts on Moorhead road, 1.8 miles southwest of Broadus.

Station number.--6-3247

Drainage area.--10.6 sq mi.

Records available.--July 1955 to

Gage.--Crest-stage gage installed July 22, 1955.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1955	--	--	(c)
1956	Mar. 16, 1956	1.75	19
1957	Aug. 28, 1957	1.55	15
1958	June 7, 1958	3.95	93
1959	Mar. 18, 1959	4.79	236
1960	Mar. 20, 1960	b 4.78	a 150
1961	--	--	(c)
1962	June 11, 1962	2.85	50

a About

b Backwater from ice.

c No evidence of flow during year.

121. Griffith Creek near Glendive, Mont.

Location.--Lat 47°06', long 104°34', in NE $\frac{1}{4}$ sec.36, T.16 N., R.56 E., near bridge on Interstate Highway 94 and U. S. Highway 10, 8 miles east of Glendive.

Station number.--6-3278

Drainage area.--15.5 sq mi.

Records available.--June 1955 to

Gage.--Crest-stage gage installed June 30, 1955.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1955	July 28, 1955	1.80	a 100
1956	Mar. 19, 1956	.86	a 80
1957	Mar. 20, 1957	.27	50
1958	July 3, 1958	.55	101
1959	Mar. 17, 1959	.74	157
1960	Mar. 20, 1960	1.41	Not determined
1961	June 29, 1961	3.96	Not determined
1962	June 6, 1962	.82	21

122. Linden Creek at Intake, Mont.

Location.--Lat 47°18', long 104°31', in NE $\frac{1}{4}$ sec.25, T.18 N., R.56 E., at bridge on State Highway 16, three-quarters of a mile northeast of Intake.

Station number.--6-3287

Drainage area.--5.01 sq mi.

Records available.--March 1958 to

Gage.--Crest-stage gage installed Mar. 11, 1958.

Cooperation.--Montana State Engineer.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1958	July 3, 1958	0.98	Not determined
1959	Sept. 21, 1959	1.54	Not determined
1960	June 21, 1960	1.35	Not determined
1961	--	--	(c)
1962	June 15, 1962	1.46	Not determined

a About

c No evidence of flow during year.

123. Indian Creek at Intake, Mont.

Location.--Lat 47°17', long 104°32', in SW $\frac{1}{4}$ sec.25, T.18 N., R.56 E., at culvert on State Highway 16, 500 ft northeast of Intake.

Station number.--6-3288.

Drainage area.--0.45 sq mi.

Records available.--March 1958 to

Gage.--Crest-stage gage installed Mar. 11, 1958.

Cooperation.--Montana State Engineer

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1958	July 3, 1958	3.23	Not determined
1959	Sept. 21, 1959	3.28	Not determined
1960	Mar. 20, 1960	.60	Not determined
1961	Mar. 13, 1961	1.04	Not determined
1962	Aug. 10, 1962	2.93	Not determined

124. War Dance Creek near Intake, Mont.

Location.--Lat 47°20', long 104°29', in SW $\frac{1}{4}$ sec.8, T.18 N., R.57 E., at culvert on State Highway 16, 3 $\frac{1}{2}$ miles northeast of Intake.

Station number.--6-3289

Drainage area.--4.31 sq mi.

Records available.--March 1958 to

Gage.--Crest-stage gage installed Mar. 11, 1958.

Cooperation.--Montana State Engineer.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1958	--	--	(c)
1959	Mar. 17, 1959	1.96	Not determined
1960	Mar. 20, 1960	1.83	Not determined
1961	--	--	(c)
1962	June 6, 1962	.94	Not determined

c No evidence of flow during year.

125. North Creek near Alzada, Mont.

Location.--Lat 45°04', long 104°31', in SE $\frac{1}{4}$ sec.7, T.9 S., R.59 E., 8 miles northwest of Alzada.

Station number.--6-3329

Drainage area.--0.68 sq mi.

Records available.--May to September 1951 (continuous record), July 1955 to

Gage.--Water-stage recorder re-installed July 21, 1955.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1951	June 17, 1951	5.18	260
1955	--	--	(c)
1956	July 2, 1956	4.32	276
1957	Aug. 28, 1957	4.32	276
1958	June 3, 1958	4.66	417
1959	June 30, 1959	3.21	58
1960	Aug. 17, 1960	3.77	142
1961	Sept. 18, 1961	4.05	203
1962	May 21, 1962	5.47	al,100

126. Wolf Creek near Hammond, Mont.

Location.--Lat 45°10', long 104°45', in SE $\frac{1}{4}$ sec.5, T.8 S., R.57 E., at culvert on U. S. Highway 212, 8 miles southeast of Hammond.

Station number.--6-3341

Drainage area.--9.09 sq mi.

Records available.--July 1955 to

Gage.--Crest-stage gage installed July 22, 1955.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1955	e July 11, 1955	4.08	298
1956	Mar. 22, 1956	3.45	175
1957	Aug. 29, 1957	4.58	365
1958	June 3, 1958	5.76	550
1959	Mar. 19, 1959	3.32	154
1960	Mar. 21, 1960	5.26	485
1961	Sept. 18, 1961	2.31	30
1962	May 21, 1962	5.62	540

a About

c No evidence of flow during year.

e Prior to installation of gage; peak discharge computed from high-water marks along highway embankment at culvert

127. Willow Creek near Alzada, Mont.

Location.--Lat 45°06', long 104°35', in center of sec. 27, T.8 S., R. 58 E., near bridge on U. S. Highway 212, 11 miles northwest of Alzada.

Station number.--6-3342

Drainage area.--123 sq mi.

Records available.--May 1958 to

Gage.--Crest-stage gage installed May 8, 1958.

Cooperation.--Montana State Engineer.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1958	June 5, 1958	7.54	455
1959	Mar. 19, 1959	7.31	548
1960	Mar. 23, 1960	11.19	a 1,350
1961	Sept. 18, 1961	1.77	40
1962	May 21, 1962	11.98	a 1,700

128. Spring Creek near Wibaux, Mont.

Location.--Lat 46°53', long 104°12', in sec. 14, T.13 N., R. 59 E., near bridge on State Highway 7, 7 miles south of Wibaux.

Station number.--6-3364.5

Drainage area.--3.88 sq mi.

Records available.--June 1955 to

Gage.--Crest-stage gage installed June 29, 1955.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1956	March 1956	0.67	61
1957	Sept. 9, 1957	1.36	127
1958	March 1958	.54	52
1959	Mar. 21, 1959	1.18	108
1960	Mar. 20, 1960	.84	76
1961	--	--	(c)
1962	July 19, 1962	3.34	438

a About

c No evidence of flow during year.

129. Fortine Creek near Trego, Mont.

Location.--Lat 48°39', long 114°55', in NE¼ sec.11, T.33 N., R.26 W., 5½ miles southwest of Trego.

Station number.--12-3005

Drainage area.--112 sq mi.

Records available.--December 1946 to September 1953 (continuous record), July 1959 to

Gage.--Crest-stage gage installed July 1, 1959. Wire-weight gage December 1946 to September 1953.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1947	Apr. 29, 1947	10.24	948
1948	May 22, 1948	10.46	1,000
1949	May 11, 1949	9.34	d 754
1950	May 16, 1950	11.8	1,810
1951	May 7, 1951	9.95	875
1952	Apr. 28, 1952	9.65	798
1953	May 7, 1953	9.90	860
1954	May 20, 1954	11.8	1,810
1958	May 24, 1958	10.2	a 850
1959	--	--	Unknown
1960	May 8, 1960	9.7	700
1961	May 11, 1961	a 10.0	a 700
1962	Apr. 19, 1962	8.96	540

a About

d Maximum observed.

130. Deep Creek near Fortine, Mont.

Location.--Lat 48°46', long 114°52', in SE $\frac{1}{4}$ sec.30, T.35 N., R.25 W., at bridge on county road, 1 $\frac{1}{4}$ miles east of Fortine.

Station number.--12-3008

Drainage area.--17.9 sq mi.

Records available.--July 1959 to

Gage.--Crest-stage gage installed July 1, 1959.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1959	(1)	2.8	150
1960	June 6, 1960	2.67	138
1961	May 31, 1961	2.92	161
1962	May 28, 1962	1.75	82

131. Kootenai River tributary near Rexford, Mont.

Location.--Lat 48°48', long 115°18', in SE $\frac{1}{4}$ sec.11, T.35 N., R.29 W., at culvert on State Highway 37, 7 miles southwest of Rexford.

Station number.--12-3017

Drainage area.--1.11 sq mi.

Records available.--July 1959 to

Gage.--Crest-stage gage installed July 1, 1959

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1959	(1)	0.5	2
1960	Apr. 8, 1960	1.25	9
1961	May 12, 1961	1.28	9
1962	May 21, 1962	1.16	8

i Peak flow occurred sometime during period May-June.

132. Gold Creek near Rexford, Mont.

Location.--Lat 48°47', long 115°19', in NW¼ sec.23, T.35 N., R.29 W., at culvert on State Highway 37, 8 miles southwest of Rexford.

Station number.--12-3018

Drainage area.--6.04 sq mi.

Records available.--July 1959 to

Gage.--Crest-stage gage installed July 1, 1959.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1959	(i)	1.5	103
1960	Apr. 8, 1960	.85	55
1961	May 21, 1961	.97	64
1962	May 12, 1962	.78	50

133. Little Jackson Creek near Libby, Mont.

Location.--Lat 48°27', long 115°19', in center sec.16, T.31 N., R.29 W., at culvert on State Highway 37, 12 miles northeast of Libby.

Station number.--12-3019

Drainage area.--2.60 sq mi.

Records available.--May 1961 to

Gage.--Crest-stage gage installed May 16, 1961.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1961	e May 15, 1961	0.4	13
1962	--	(f)	<4

e Prior to installation of gage.

f Peak did not reach bottom of gage.

i Peak flow occurred sometime during period May-June.

134. Peoples Creek near Libby, Mont.

Location.--Lat 45°20', long 115°19', in NW¼ sec.28, T.30 N., R.29 W., at culvert on private road 12 miles east of Libby.

Station number.--12-3020.5

Drainage area.--2.65 sq mi.

Records available.--May 1961 to

Gage.--Crest-stage gage installed May 16, 1961.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1961	e May 15, 1961	0.3	Not determined
1962	May 18, 1962	.05	Not determined

135. Shaughnessy Creek near Libby, Mont.

Location.--Lat 48°18', long 115°36', in W½ sec.5, T.29 N., R.31 W., at culvert on county road, 6½ miles southwest of Libby.

Station number.--12-3024

Drainage area.--1.11 sq mi.

Records available.--July 1959 to

Gage.--Crest-stage gage installed July 2, 1959.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1959	(i)	0.4	16
1960	--	(f)	<4
1961	Mar. 30, 1961	.73	33
1962	May 16, 1962	.67	29

e Prior to installation of gage.

f Peak discharge did not reach bottom of gage.

i Peak flow occurred sometime during period May-June.

136. Whitetail Creek near Yaak, Mont.

Location.--Lat 48°50', long 115°49', in NE $\frac{1}{4}$ sec.1, T.35 N., R.33 W., 500 ft upstream from mouth, 5 miles west of Yaak.

Station number.--12-3042.5

Drainage area.--2.61 sq mi.

Records available.--July 1960 to

Gage.--Crest-stage gage installed July 15, 1960.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1960	(i)	0.7	33
1961	May 1, 1961	1.02	49
1962	May 21, 1962	.45	11

137. Cyclone Creek near Yaak, Mont.

Location.--Lat 48°45', long 115°54', in SE $\frac{1}{4}$ sec.32, T.35 N., R.33 W., at bridge a quarter of a mile upstream from mouth, 10 $\frac{1}{2}$ miles southwest of Yaak.

Station number.--12-3043

Drainage area.--5.66 sq mi.

Records available.--July 1960 to

Gage.--Crest-stage gage installed July 15, 1960.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1960	(i)	2.06	220
1961	May 26, 1961	1.78	172
1962	May 21, 1962	1.26	97

i Peak flow occurred sometime during period May-June.

138. Fourth of July Creek near Yaak, Mont.

Location.--Lat 48°42', long 115°52', in NW¼ sec.22, T.34 N., R.33 W., at bridge 500 ft upstream from mouth, 12 miles southwest of Yaak.

Station number.--12-3044

Drainage area.--7.70 sq mi.

Records available.--July 1960 to

Gage.--Crest-stage gage installed July 14, 1960.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1960	(i)	2.5	258
1961	May 26, 1961	2.06	196
1962	Apr. 19, 1962	1.60	138

139. Smith Gulch near Silverbow, Mont.

Location.--Lat 45°57', long 112°40', in N½ sec.1, T.2 N., R.9 W., at culvert on Interstate Highway 15 and U. S. Highway 91, 4 miles south of Silverbow.

Station number.--12-3233

Drainage area.--4.85 sq mi.

Records available.--May 1959 to

Gage.--Crest-stage gage installed May 11, 1959.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1959	--	--	a 5
1960	Mar. 21, 1960	1.97	43
1961	Sept. 11, 1961	2.41	67
1962	Apr. 14, 1962	1.70	32

a About

i Peak flow occurred sometime during period May-June.

140. Clark Fork tributary near Drummond, Mont.

Location.--Lat 46°37', long 113°02', in SW $\frac{1}{4}$ sec.18, T.10 N., R.11 W., half a mile upstream from Interstate Highway 90 and U. S. Highway 10, 6 $\frac{1}{2}$ miles east of Drummond.

Station number.--12-3247

Drainage area.--4.61 sq mi.

Records available.--June 1959 to

Gage.--Crest-stage gage installed June 17, 1959.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1958	e June 9, 1958	1.64	133
1959	--	--	(c)
1960	Mar. 18, 1960	1.62	84
1961	Apr. 3, 1961	.70	Not determined
1962	Apr. 4, 1962	.62	Not determined

141. Morris Creek near Drummond, Mont.

Location.--Lat 46°40', long 113°06', in NW $\frac{1}{4}$ NW $\frac{1}{4}$ sec.34, T.11 N., R.12 W., at culvert on county road, 2 miles east of Drummond.

Station number.--12-3248

Drainage area.--12.6 sq mi.

Records available.--June 1959 to

Gage.--Crest-stage gage installed June 17, 1959.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1960	Mar. 26, 1960	1.23	Not determined
1961	Apr. 3, 1961	.47	3
1962	Apr. 23, 1962	.65	4

c No evidence of flow during year.

e Prior to installation of gage.

142. Edwards Gulch at Drummond, Mont.

Location.--Lat 46°40', long 113°09', in SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec.29, T.11 N., R.12 W., at culvert on private road, 0.4 mile north of Interstate Highway 90 and U. S. Highway 10 at Drummond.

Station number.--12-3317

Drainage area.--4.69 sq mi.

Records available.--June 1959 to

Gage.--Crest-stage gage installed June 17, 1959.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1960	Mar. 21, 1960	b 1.14	Not determined
1961	Apr. 3, 1961	.14	2
1962	Apr. 14, 1962	.55	8

143. West Twin Creek near Bonner, Mont.

Location.--Lat 46°55', long 113°43', in NW $\frac{1}{4}$ sec.2, T.13 N., R.17 W., at bridge on State Highway 20, 8 miles east of Bonner.

Station number.--12-3399

Drainage area.--7.47 sq mi.

Records available.--June 1959 to

Gage.--Crest-stage gage installed June 17, 1959.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1959	June 1959	0.7	98
1960	Apr. 6, 1960	.63	82
1961	May 27, 1961	.91	128
1962	Apr. 19, 1962	.92	92

b Backwater from ice.

144. Marshall Creek near Missoula, Mont.

Location.--Lat $46^{\circ}53'$, long $113^{\circ}55'$, in NW $\frac{1}{4}$ sec.18, T.13 N., R.18 W., at culvert on Interstate Highway 90 and U. S. Highway 10, 3 miles east of Missoula.

Station number.--12-3402.

Drainage area.--5.47 sq mi.

Records available.--June 1959 to

Gage.--Crest-stage gage installed June 19, 1959.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1959	June 1959	0.3	13
1960	Apr. 7, 1960	.26	11
1961	May 27, 1961	.27	12
1962	Apr. 25, 1962	.53	15

145. Burke Gulch near Darby, Mont.

Location.--Lat $46^{\circ}02'$, long $114^{\circ}09'$, in S $\frac{1}{2}$ sec.12, T.3 N., R.21 W., 1 mile upstream from mouth, $1\frac{1}{2}$ miles east of Darby.

Station number.--12-3443

Drainage area.--6.28 sq mi.

Records available.--April 1958 to

Gage.--Staff gage installed Apr. 16, 1958. Crest-stage gage installed July 21, 1959.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1958	May 12, 1958	0.94	11
1959	May 16, 1959	--	a 5
1960	Apr. 7, 1960	.85	8
1961	May 27, 1961	.40	2
1962	May 1962	(f)	a 4

a About

f Peak discharge did not reach bottom of gage.

146. Camas Creek near Hamilton, Mont.

Location.--Lat 46°09', long 114°13', in SW $\frac{1}{4}$ sec.34, T.5 N., R.21 W., 8 miles southwest of Hamilton.

Station number.--12-3458

Drainage area.--6.01 sq mi.

Records available.--April 1958 to

Gage.--Staff gage installed Apr. 17, 1958. Crest-stage gage installed July 21, 1959.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1958	May 20, 1958	2.52	240
1959	June 7, 1959	2.30	190
1960	June 4, 1960	2.65	265
1961	May 28, 1961	2.30	190
1962	June 25, 1962	2.06	80

147. Gash Creek near Victor, Mont.

Location.--Lat 46°24', long 114°16', in W $\frac{1}{2}$ sec.32, T.8 N., R.21 W., 5 miles west of Victor.

Station number.--12-3502

Drainage area.--3.37 sq mi.

Records available.--July 1958 to

Gage.--Staff gage installed July 8, 1958. Crest-stage gage installed July 20, 1959.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1958	May 21, 1958	--	a 200
1959	June 5, 1959	1.58	160
1960	June 4, 1960	.75	80
1961	May 28, 1961	1.57	99
1962	June 25, 1962	1.26	47

148. Hayes Creek near Missoula, Mont.

Location.--Lat 46°49', long 114°06', in center sec.10, T.12 N., R.20 W., at culvert on U. S. Highway 93, 2 miles southwest of Missoula.

Station number.--12-3522

Drainage area.--4.16 sq mi.

Records available.--June 1959 to

Gage.--Crest-stage gage installed June 19, 1959.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1959	(1)	0.6	3
1960	Apr. 5, 1960	3.77	56
1961	May 27, 1961	.70	4
1962	Apr. 24, 1962	1.34	14

149. Nigger Gulch near Alberton, Mont.

Location.--Lat 47°01', long 114°32', in NW¼ sec.33, T.15 N., R.23 W., at culvert on county road, 2.6 miles west of Alberton.

Station number.--12-3534

Drainage area.--8.02 sq mi.

Records available.--June 1959 to

Gage.--Crest-stage gage installed June 19, 1959

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1959	(1)	0.7	23
1960	Apr. 6, 1960	.80	27
1961	May 2, 1961	.74	24
1962	May 29, 1962	.54	16

i Peak flow occurred sometime during period May-June.

150. Thompson Creek near Superior, Mont.

Location.--Lat 47°12', long 114°55', in SW $\frac{1}{4}$ sec.28, T.17 N., R.26 W., 1 $\frac{1}{4}$ miles west of Superior.

Station number.--12-3538

Drainage area.--12.2 sq mi.

Records available.--May 1961 to

Gage.--Crest-stage gage installed May 15, 1961.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1961	May 26, 1961	0.53	a 55
1962	Apr. 24, 1962	.82	85

151. East Fork Timber Creek near Haugan, Mont.

Location.--Lat 47°25', long 115°25', in NE $\frac{1}{4}$ sec.16, T.19 N., R.30 W., at culvert on county road 2 miles north of Haugan.

Station number.--12-3538.5

Drainage area.--2.72 sq mi.

Records available.--May 1961 to

Gage.--Crest-stage gage installed May 15, 1961.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1961	May 2, 1961	0.38	23
1962	Apr. 15, 1962	.82	45

152. North Fork Little Joe Creek near St. Regis, Mont.

Location.--Lat 47°16', long 115°09', in SW $\frac{1}{4}$ SE $\frac{1}{4}$ sec.34, T.18 N., R.28 E.,
at bridge on county road, 3 miles southwest of St. Regis.

Station number.--12-3541

Drainage area.--14.7 sq mi.

Records available.--July 1959 to

Gage.--Crest-stage gage installed July 3, 1959.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1960	May 12, 1960	1.84	179
1961	May 26, 1961	1.88	185
1962	May 27, 1962	1.16	91

153. Skyland Creek near Essex, Mont.

Location.--Lat 48°17'30", long 113°23'10", in SE $\frac{1}{4}$ NW $\frac{1}{4}$ sec.9, T.29 N., R.14 W.,
10 miles northeast of Essex.

Station number.--12-3560

Drainage area.--8.09 sq mi.

Records available.--January 1946 to September 1952 (continuous record),
June 1959 to

Gage.--Water-stage recorder re-installed June 30, 1959.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1946	May 28, 1946	1.72	117
1947	May 9, 1947	1.84	189
1948	May 22, 1948	2.15	284
1949	May 16, 1949	1.68	126
1950	June 12, 1950	2.46	268
1951	June 15, 1951	2.05	179
1952	May 15, 1952	1.87	148
1954	May 19, 1954	2.3	230
1959	June 5, 1959	2.1	189
1960	June 3, 1960	2.00	169
1961	May 30, 1961	2.48	267
1962	May 29, 1962	1.58	93

154. Moccasin Creek near West Glacier, Mont.

Location.--Lat 48°29', long 113°51', in SE $\frac{1}{4}$ sec.35, T.32 N., R.18 W., at culvert on U. S. Highway 2, 6 $\frac{1}{2}$ miles east of West Glacier.

Station number.--12-3573

Drainage area.--1.97 sq mi.

Records available.--June 1959 to

Gage.--Crest-stage gage installed June 30, 1959.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1959	(i)	1.3	102
1960	June 3, 1960	1.29	120
1961	May 27, 1961	1.43	105
1962	Apr. 24, 1962	1.17	50

155. Middle Fork Flathead River tributary at West Glacier, Mont.

Location.--Lat 48°30', long 113°58', in NE $\frac{1}{4}$ sec.36, T.32 N., R.19 W., at culvert on U. S. Highway 2, 0.9 mile east of West Glacier.

Station number.--12-3574

Drainage area.--0.10 sq mi.

Records available.--June 1959 to

Gage.--Crest-stage gage installed June 30, 1959.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1960	Apr. 3, 1960	0.27	3
1961	May 2, 1961	.19	2
1962	Apr. 23, 1962	.11	1

i Peak flow occurred sometime during period May-June.

156. Rock Creek near Olney, Mont.

Location.--Lat 48°37', long 114°39', in NW¼ sec.24, T.33 N., R.24 W., at culvert on U. S. Highway 93, 6 miles northwest of Olney.

Station number.--12-3639

Drainage area.--6.18 sq mi.

Records available.--May 1961 to

Gage.--Crest-stage gage installed May 16, 1961.

Annual maximum data.--

<u>Water year</u>		<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1961	e	May 15, 1961	a 1.2	24
1962		May 21, 1962	.82	13

157. Teepee Creek near Polson, Mont.

Location.--Lat 47°49', long 114°01', in SW¼ sec.22, T.24 N., R.19 W., at culvert on State Highway 35, 11 miles northeast of Polson.

Station number.--12-3703

Drainage area.--2.55 sq mi.

Records available.--June 1959 to

Gage.--Crest-stage gage installed June 29, 1959.

Annual maximum data.--

<u>Water year</u>		<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1960		June 3, 1960	0.48	11
1961		June 2, 1961	.90	22
1962		Apr. 24, 1962	.05	4

a About

e Prior to installation of gage.

158. Hell Roaring (Big) Creek near Polson, Mont.

Location.--Lat 47°42', long 114°03', in NW $\frac{1}{4}$ sec.4, T.22 N., R.19 W., at power house, 5 $\frac{1}{2}$ miles east of Polson.

Station number.--12-3705

Drainage area.--6.41 sq mi.

Records available.--May 1917 to September 1932 (continuous record), June 1959 to

Gage.--Crest-stage gage installed June 29, 1959. May 1917 to September 1932, water-stage recorder.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1917	June 9, 1917	--	d 104
1918	June 11-14, 1918	--	38
1919	May 27, 1919	--	69
1920	May 14, 1920	--	29.4
1921	June 7, 1921	--	23.3
1922	May 20, 1922	--	49
1923	June 22, 1923	--	29.7
1924	May 17, 1924	--	27.2
1925	May 22, 1925	--	61
1926	May 1, 1926	--	34
1927	June 11, 1927	--	61
1928	May 23, 1928	--	39.5
1929	May 25, 1929	--	33.3
1930	May 25, 1930	--	14.1
1931	Dec. 1, 1930	--	g 8.3
1932	Mar. 19, 1932	--	g 9.0
1960	June 3, 1960	0.81	Not determined
1961	June 2, 1961	.93	Not determined
1962	Apr. 24, 1962	.49	Not determined

d Maximum observed.

g Maximum daily.

159. Dayton Creek near Proctor, Mont.

Location.--Lat 47°55', long 114°20', in NW $\frac{1}{4}$ sec.20, T.25 N., R.21 W., at culvert on county road, 2 $\frac{1}{2}$ miles northwest of Proctor.

Station number.--12-3713

Drainage area.--20.9 sq mi.

Records available.--June 1959 to

Gage.--Crest-stage gage installed June 18, 1959.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1959	(1)	1.3	37
1960	May 12, 1960	1.74	51
1961	May 27, 1961	3.00	93
1962	Apr. 24, 1962	1.54	45

160. Mill Creek near Niarada, Mont.

Location.--Lat 47°50', long 114°41', in NE $\frac{1}{4}$ sec.20, T.24 N., R.24 W., at bridge on county road, 3 $\frac{1}{2}$ miles northwest of Niarada.

Station number.--12-3743

Drainage area.--28.0 sq mi.

Records available.--June 1959 to

Gage.--Crest-stage gage installed June 18, 1959.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1959	(1)	1.1	90
1960	May 13, 1960	1.00	74
1961	May 1, 1961	1.42	140
1962	Apr. 24, 1962	.97	70

1 Peak flow occurred sometime during period May-June.

161. South Fork Garden Creek near Hot Springs, Mont.

Location.--Lat 47°39', long 114°43', in SW $\frac{1}{4}$ sec.20, T.22 N., R.24 W., at bridge on county road, 3 miles north of Hot Springs.

Station number.--12-3757

Drainage area.--3.29 sq mi.

Records available.--June 1959 to

Gage.--Crest-stage gage installed June 18, 1959.

Annual maximum data.--

<u>Water year</u>	<u>Date</u>	<u>Gage height (ft)</u>	<u>Discharge (cfs)</u>
1959	(i)	--	a 10
1960	April 1960	--	a 5
1961	May 27, 1961	0.86	29
1962	May 23, 1962	.48	14

a About

i Peak flow occurred sometime during period May-June.

Table 1.—Peak discharge at points other than gaging stations.

Stream	Location	Drainage area (sq mi.)	Date	Discharge (cfs)
Armells Creek near Roy	In SW $\frac{1}{4}$ sec.9, T. 21N., R.23 E., about 6 miles upstream from mouth, 2 miles downstream from Fargo Coulee, and 20 miles northeast of Roy	370	June 16, 1962	14,600
Jawbone Creek at Harlowton	At culvert in U.S. Highway 12 in Har- lowton just north of football field in center of sec.22, T.8 N., R.15 E.	2.14	July 12, 1962	749

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Antelope Creek tributary No. 2 near Harlowton	34
Basin Creek near Volborg.	69
Basin Creek tributary near Volborg.	68
Bear Canyon Creek near Bozeman.	18
Beaver Creek at Gibson Dam, near Augusta.	27
Beaverhead River tributary near Dillon.	11
Beaverhead River tributary No. 2 near Dillon.	11
Berry Creek near Columbus	62
Big Muddy Creek at Plentywood	57
Big Sandy Creek near Assinniboine	45
Black Coulee near Malta	47
Box Elder Creek at damsite, near Plentywood	58
Box Elder Creek near Plentywood	58
Box Elder Creek tributary near Winnett.	35
Bridger Creek near Greycliff.	60
Bullhook Creek near Havre	46
Burke Gulch near Darby.	82
Cabin Creek near Townsend	19
Camas Creek near Hamilton	83
Casino Creek tributary near Lewistown	32
Castle Creek tributary near Ringling.	19
Cat Creek near Cat Creek.	39
Clark Fork tributary near Drummond.	80
Crystal Creek near East Helena.	21
Currant Creek near Roundup.	35
Cyclone Creek near Yaak	78
Dayton Creek near Proctor	90
Deep Creek near Fortine	75
Deep Creek below North Fork Deep Creek, near Townsend	20
Disjardin Coulee near Malta	48
Dog Creek near Craig.	23
Dry Ash Creek, South Fork, near Circle.	56
Dry Fork Coulee tributary near Loma	30
Duch Creek, East Fork, near Brockway.	53
Duck Creek near Brockway.	53
East Gallatin River near Bozeman.	17
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Redwater Creek tributary near Brockway	55
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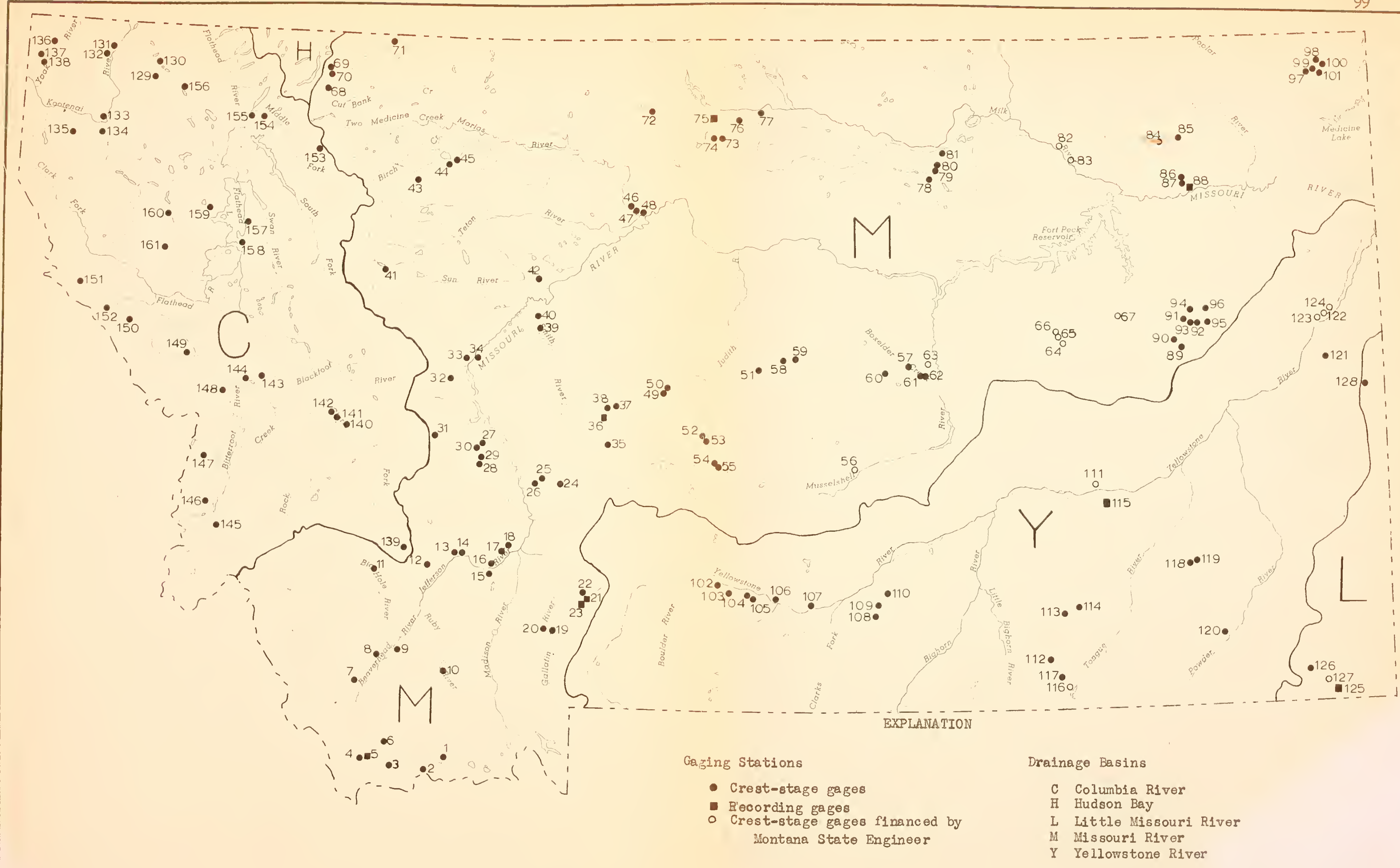


Figure 1.—Map showing location of gaging stations and major drainage basins.

